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PSYCHOPATHIC PERSONALITY AMONG THE MENTALLY DEFECTIVE*

BY EDWARD J. HUMPHREYS, M. D.

The problem of psychopathic personality among mental defectives is a part of the general problem of the psychopathic states. It is approached in this study through a comparison of the mental integrations of a psychopathic defective with those of two superior psychopaths. The material has been derived from literature and clinical material studied at the Henry Phipps Clinic, the New York State Psychiatric Institute, Letchworth Village, the Napanoch Institution for Male Defective Delinquents, and the Woodbourne Institution for Defective Delinquents. The three case studies represent a selection from over 60 reviewed, of which a number have been studied with considerable care. In order to provide a common basis for an approach to the theoretical consideration of the terms "mental deficiency" and "psychopathic personality," an abridged review has been made of contributions to the literature. This abridged review will be followed by a presentation of clinical material for comparison with the literature outlined.

Our problem raises the question "What is mental deficiency?" In attempting to answer this, it is possible to use more or less standardized definitions, a procedure not possible with definitions of "psychopathic personality," which require wider treatment. According to the British Mental Deficiency Act of 1927,[1] "Mental defectiveness means a condition of arrested or incomplete development of mind existing before the age of eighteen years, whether arising from inherent causes or induced by disease or injury." Tredgold[2] contributed a sociological element by adding the provision that the defective individual be "incapable of adapting himself to the normal environment of his fellows in such a way as to maintain existence independently of supervision, control or external support." The British Education Act of 1921[1] defined the concept "mental defect" as educational incapacity rather than social incapacity. The New York State Mental Hygiene Law[3] has added a further differentiation in that the defective person "is not insane or of unsound mind to such an extent as to require his commitment to an institution for the insane." These definitions are satisfac-

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tory to certain degrees; they fail, however, to clearly distinguish individuals who might be described in identical terms but who may be technically considered as psychopaths not suffering from intellectual deficiency. Neither do the definitions make diagnostic provisions for individuals becoming definitely defective "after an early age." To define "mental deficiency" will require much more study, but two points vitally important for the present purposes stand out clearly—namely, that "mental deficiency" consists of *arrests in development, especially mental development, associated with social inadequacy.*

Definitions of "psychopathic personality" or "psychopathic states" are less consistent and less standardized. In examining the definitions or opinions on the meaning of "psychopathic states," certain terms recur frequently in the literature. These terms will be briefly considered before presenting in abridged form various attempts to define psychopathic states. These terms represent common interpretations, since they were selected from Funk and Wagnall's standard dictionary[4] and Warren's dictionary of psychology.[5] The dictionary definitions were used because a presentation of the connotations of these terms as given by the various schools of psychiatric and psychological thought would introduce a problem of discussion too extensive for the present purpose.

Intellect: "The group of cognitive processes, more especially their higher forms, e. g., the discovery of relations or, the faculty of power of perception or thought, or power of understanding."

Conation: "Purposive activity in its inception, i. e., the active phase of volition, desire, aversion, conscious impulse, the conscious tendency to act, the faculty of desire, impulse or exertion as distinguished from cognition and feeling."

Affect-emotion: "An experience or mental state characterized by a strong degree of feeling and usually accompanied by motor expression, or, any strong movement or perturbation of the conscious mind;" "an act or state of excited feeling."

Temperament: "The general affective nature of an individual as determined by his inheritance and life history;" or, " a special type of mental constitution and development or mixture of characteristics supposed to have its basis in the bodily organism and to be transmissible by inheritance," "natural disposition," "the sum-

mary of intellectual and emotional tendencies or proneness to certain feelings, words, desires."

Character: ("A system of habits"[6]). "A phase of personality comprising especially the more enduring traits which are of ethical and social significance, or the combination of qualities distinguishing any person or class of persons."

With these terms in mind, it is possible to present in abridged form a few of the opinions on psychopathic states given by a number of authorities. Table 1 compares these opinions. Such a chart obviously has many defects, including overlappings in connotations, and personal factors in choice of phrases. Each word or phrase, however, was selected in broad reference to the context of the author's writings. Following is Table 1.

Other writers in speaking of psychopaths have used the following phrases: "out of touch with social customs" (Clark[24]); "defect in 'mutual aid' or herd-instinct" (Thomas[25]); "no community conscience" (Bryant[26]); "defect in emotional sphere" (Karpman[27]); "dominated by the 'me-my' instinct of childhood" (Sheetz[28]); "the expression 'a burnt child dreads the fire'—does not apply to the psychopath;" "markedly egocentric and satisfied with his behavior."

For clinical material dealing with the nature of the psychopath, it is appropriate to refer again to the latest contribution in this field, D. K. Henderson's excellent book, "Psychopathic States."[7] Henderson reviews the important contributions to the field from the time of Pritchard (1835) to the present. He indicates that psychopaths are "a group of people well-endowed intellectually, but so emotionally unstable as to be unable to fit harmoniously into the fabric of society." According to Henderson, the psychopath is "unable to fit into the life of the herd," leads an "individualistic type of existence with no thought or feeling for his family, his friends or his country." "He is as blunted emotionally as many schizophrenics, he shows a 'belle indifference' equal to that of the hysteric, an absence of judgment and reason as great as that of a wayward spoiled child." "He fails to grow up, he remains at the level of a primitive savage with a distinct distaste for reasoning and an 'impermeability to experience' which allows him to live, think, feel and act in a manner foreign to his more civilized neigh-

TABLE 1. DEFICIENCY IN MENTAL INTEGRATIONS OF PSYCHOPATHS

According to	Intellect	Conation	Affect-emotion	Temperament	Character
Henderson (7)	Well-endowed	"Belle indifference" or "genius type"	Blunted, primitive savage, self-centered	Individualistic	Wayward, spoiled child, fails to grow up
Kahn (8,9)	Dull, intelligent	Unusual strength or weakness, insecurity	(Included in temperament)	Extreme variation in emotional proneness	Overdrive from or to ego
Kraepelin (10)	Frequently good	Inadequate predisposition	Inadequate predisposition	Consistent lack of equanimity in development of entire personality	
Bleuler (11)	Dull, average, superior	Strong, weak	Enhanced feeling of self	Extreme variations	Socially undependable or hostile
Shrubsall (12)	Lack of inhibition	Variable	Lack of feelings, infantile level	Conduct amoral	Instinctual
Karpas (13)	Intact intelligence or "intellectual inferiority"	"Volitional inferiority"; lack of development of will power, feeling, moral sense	"Emotional" — seclusive, vacillating, odd, congenital psychoneurosis	See volition	See volition
Meyer (14)	Linked with oligergasias	More or less static constitutional types: the unstable, sensitive, emotional, fearful, insecure and weak, suspicious and callous; egotropic.			
Birnbaum (15)	Dull, intelligent	Dispositionally conditioned, constitutional, psychic deviations, especially in will, feeling, instinct—in entire sphere of character.			
Strecker-Ebaugh (16)	Constitutional lack of responsiveness to profit by social experience. No permanent standardized activity.				
Tanzi (17)	Arrest of psychical development: partial infantilism of character.				
Bianchi (18)	Lack of development of will power, feelings, moral sense.				
Tredgold (19)	Moral defective arrested in various stages of development of total personality: arrest in intellect, will, feeling, character formation.				
Burt (20, 21)	Temperamental deficiency innate; emotional rather than intellectual, instinctive behavior.				
Partridge (22, 23)	With or without	Variable	Immature, egocentric	Difficulty in stabilizing moods	Chronic sociopaths: child's values

bors." "The judicial, deciding, selecting process described as intelligence and energising, emotivating, driving powers called character" are not working in harmony. Henderson considers three types: (1) the predominantly aggressive, including the suicidal and homicidal, the alcoholic and drug addicts, the epileptoid, and the sex variants; (2) the predominantly passive, represented by the "petty" criminals, the emotionally unstable, hypochondriacal, sensitive, shy and excitable types classifiable as hysterical, neurasthenic, cycloid, etc.; (3) the predominantly creative, which includes the talented and genius types with emphasis on the latter. The creative types include those having exaggerated sensitivity, those who are uneven and inadequate socially, those who are individualists more or less of necessity. By stressing in his definition that the psychopaths are well-endowed intellectually, Henderson seemingly reserves for other consideration the psychopathic defectives, an important group of psychopaths presenting psychopathic states many of which are identical or similar to those of the intellectually well-endowed.

It should be pointed out that the term "moral defective" was used in the early nineteenth century and is still used by a number of authors, but is generally being superceded by the term "psychopathic states" or "psychopathic personality." According to the British Mental Deficiency Act of 1927,[1] the term includes both intellectual and other defects in mental organization; nevertheless, the term has also been applied to intellectually intact but morally inadequate persons. The material which has just been summarized indicates considerable confusion in the conceptions and connotations of "psychopathic personality" or "psychopathic states." As in the case of "mental deficiency," however, psychopathic personality also represents *arrests in development, especially mental development, associated with social inadequacy.*

If both the terms "psychopathic personality" (or "psychopathic states") and "mental deficiency" connote arrests in development and social inadequacy, how may the specific similarities or dissimilarities be demonstrated clinically?

An attempt to consider this question has been made through a comparison of the mental integrations of three psychopaths, one intellectually defective according to standard tests, the other two

intellectually superior. In this evaluation, the common factors of comparison will be the terms already used in comparing the opinions on "psychopath states." In the further use of these terms, *intellect* will be represented by the degree of schooling and nature of professional attainments; *conation* by certain relationships affecting persons or personal objectives toward impersonal goals; *affect-emotion* by an abundance of emotional responses as contrasted with intellectual integrations; *temperament* by the "affective set" or "emotional proneness;" and *character* by the relationships of these patients to society through institutional experiences.

The first case treats of a psychopathic defective, the second and third cases of superior psychopaths. Table 2 presents a summary of these three cases.

Case Material

Case A

I. *Physical status:* The patient's pupils were sluggish to light, but as a whole he was considered "physically normal," an able-bodied adult, there being no evidence of syphilis or other disease.

II. *Family:* The parents were of Russian-Jewish extraction on both sides and had little education. In New York City, the family lived in a four-room tenement apartment located in a poor and congested Jewish neighborhood. The patient has three stepbrothers living and well but no brothers. Mother died four years after his birth. Patient was her only child. Father, a truck driver, has married twice. The patient's malbehavior began in Russia, from which country he emigrated to the United States at the age of 10. The parents had left him behind during this period and have shown little interest in the patient since his institutionalization.

III. *Analysis of mental integrations:*

a. *Intelligence.* The patient had no schooling in Russia because of incorrigibility, and could not read or write on coming to America. In America he attended public and institutional schools until the age of 14, when he left the ungraded class. In a special school, he received an I. Q. rating of 75-80. In the second state institution to which he was committed, he received an I. Q. rating of 57 (mental age of 9 years). In a third state institution, he was

TABLE 2

	Case A—L. V.	Case B—N. Y. S. P. I. H.	Case C—H. P. P. C.
Physical status	Able-bodied male of 25 years	Able-bodied male of 31 years	Able-bodied male of 36 years
Family	Little education. Father truck driver. Mother died when patient was 4 years of age. Stepmother, 3 stepbrothers. Evidence of family rejection.	Paternal line—grandfather quarrelsome, loveless marriage. Parents had great wealth. Father domineering; unsatisfactory sex adjustments; alcoholic, suicided. Mother had tantrums, divorced. Patient antagonistic to her.	Number of unstable but distinguished members. Other members with serious mental disorders. One grandfather committed suicide. Father distinguished in field, taciturn. Mother nervous, moody, dominating. Parents wrangled. Sister psychotic and psychopathic.
Intelligence	Ungraded class at 14 years. Cannot read or write. I. Q. ranged from 57 to 60. Sensorium clear except social insight and judgement.	Excellent in school. Considered talented. Newspaper, magazine, and radio work. $6,000 per annum. Sensorium clear except social insight and judgement.	Excellent in school. Talented in painting. Successful lecturer, teacher, author. Advanced college degree. Sensorium clear except social insight and judgement.
Conation	Certain success with group (leadership in gang). Failure in forming or reaching life goal.	Certain success with group (intellectual attainment). Failure in forming or reaching life goal.	
Temperament	Active, outgoing type with actions isolating individual from others.	Active, outgoing type with actions tending to seclude patient from others.	Active, outgoing type with actions tending to seclude patient from others, to concentrate his life upon one or few personalities to exclusion of group life.
Affect-emotion	Tantrums, fighting, sexuality (incest ?) sadism, pedophilia, homosexuality.	Spells of irritability, anger, moodiness or brooding. Sexual orgies. Unsatisfactory heterosexual experiences. Alcoholism; heroin addiction. Suicidal.	Quarrelsomeness. Hatred of brother. Pornography. Prostitutes. Overt homosexuality. Alcoholism. Suicidal.
Character	Incorrigible delinquent. Institutional dependent.	Fixed flight-and-fight habits. Clinic or hospital dependent.	Fixed flight-and-fight habits. Clinic or hospital dependent.

given an I. Q. of 60 (mental age of 8 years, 11 months). The patient was oriented as to time, place and person, and while his general knowledge was limited, his sensorium was fairly intact. Judgement was impaired as far as social relationships were concerned.

b. *Conation.* His will or urge to expression found outlet primarily through his aggressiveness which poured out through fighting, tantrums, sadistic behavior, and sexuality, which will be described below. He was successful conatively in relation to a circumscribed circle of action; he organized friends into a military squad and drilled them in tactics; his status as "general" was accepted unhesitatingly. He has had no incentive to read. His ambition was to be a barber. He had an outstanding interest in music: although he played no instrument, his family believed him talented in this direction. There has been no daydreaming, only more or less constant activity. He was eminently unsuccessful, from the conational aspect, in any urge toward social adaptation. Failure to socialize energies resulted in his failure as an individual.

c. *Temperament.* Temperamentally, his "emotional set" tended toward a destructive outpouring of energy. This is a constant feature of his entire history, no matter what form the outlet took. He could be classified under Henderson's "aggressive types of psychopathic states" (attempts to injure others, sex variant), Bleuler's "aberrations of the sexual impulse" and "abnormal instability," Aschaffenburg's "affect criminal," or Kahn's "hyperthymic types" (active autist).

d. *Affect-emotion.*

Before Commitment

The patient has always had violent tantrums (characterized by punching, kicking, biting, twisting), even when still in Russia. As to fighting and unmanageability, he was beyond control in Russia, would run away and fight with anyone. In school in this country, he was unmanageable and vicious. He fought boys big and small and was afraid of neither. At a special school, he was noted for incorrigibility. While there, his personal habits were good. However, in his sleep he was restless, talked, walked, screamed and had nightmares. The patient quarreled with his stepbrothers and became easily enraged on the street and in school, often striking for

no apparent reason. His fighting was "longshoreman style," not "American style" (punching, kicking, biting, twisting).

The patient used to torture animals. He has played with little girls sexually and always liked to hug and kiss his mother. At 10 years, he slept with his father and stepmother. He would embrace the latter sexually. Almost from the first day in the United States, he began to steal and would take anything in his home or neighbor's apartment. He freely spent stolen money on his friends. Boys in the neighborhood liked him despite his bullying, because of his generosity. He always divided with them whatever he had, and was very loyal to three friends, invariably defending them.

After Commitment

At Randall's Island, the patient had to be kept in a special room.

After commitment to Letchworth Village, he continued to manifest his incorrigibility. He broke into buildings (garages and bakery), pilfered articles, attacked men trying to apprehend him, would bite, scratch, kick, strike other boys, bullied and mistreated younger boys but would not fight those of his own size (contrast earlier behavior). He was sly, active, talkative, untruthful; cursed, threw stones, hid in attendant's home, willfully attacked an attendant. He ran away from the institution, but was apprehended. While "on escape," he did not leave the institution but behaved as follows: broke into a garage, slept in an automobile, took a large flashlight apart breaking a number of the parts and scattering them on floors of car and garage, ground maple sugar candies into rug of car apparently using his heel. While hiding in a staff house, he would steal food when no one was visible, pilfered small objects some of which were useless to him, entered a wardrobe, smearing butter over a dress.

After Commitment to a State School for Defective Delinquents

At this institution, he was diagnosed as an unstable, illiterate psychopath with a foreign language handicap. His demeanor record, before a parole was granted, consisted of 38 counts or 870 marks (days) against him. The counts included the following items: "disorderly, calling vile names, molesting others, running over beds and fooling with others, malicious assault and malicious

shouting from cell, out of place and disobedience, fighting, licentiousness (kissing, hugging, loving), malicious whistling, scoffing, kicking of spittoons and splashing of their contents over other inmates and the wall, arguing and kicking." After six months of relatively improved behavior, he was granted a parole which he violated by burglarizing.

After his return to another state school for defective delinquents, the patient quickly amassed another group of counts against him—namely, 23 counts totalling 345 marks (days) penalty. The counts included fighting, aggressiveness, disobedience, thieving, insolence, wasting of food, horseplay, smoking in line, destroying state property.

e. *Character.* (Character is interpreted socially as an expression of a persistent personality response to inner and environmental factors leading to community supervision). The patient, in all probability, has been and will be an "institutional character" with a constantly disturbing influence. He appears to be truly incorrigible, exhibiting deviate sexuality, aggressiveness, destructiveness, resentment and flight from social responsibility.

Case B

I. *Physical status:* Essentially an able-bodied young adult who appeared younger than his chronological age, and had feminine hair distribution. At six years, he had diphtheria followed by "heart trouble" which cleared, reappeared at 14 years but has not occurred since 1926. There is a history of parotitis and unilateral orchiditis.

II. *Family:* The father suicided by morphine following bankruptcy at 52 years. He was a millionaire in the lumber business and was described as a strong, dominating personality, unable to get along with his wife. The latter divorced him when the patient was eight. He then married a woman of lower social position and divorced her because of infidelity, but remarried her later. He had always used alcohol, but following the first divorce, drank a great deal until death. He went about with "fast" women. From eight years of age, the patient hardly knew his father until the latter's second marriage, then saw him often.

In the paternal line, each of the grandparents was wealthy, held high social position. They nevertheless made a loveless, quarrelsome and unhappy marriage.

The mother was bred in great wealth but her married life was unhappy. She frequently had "fits," rolling over the floor in an effort to gain dominance in the household. She was divorced and persisted for many years in a suit against her former husband, attempting to obtain more money from him. She has been working and supporting herself in an acceptable fashion. The mother was described as puritanical, the father loose. The mother forced the child to bear witness against his father, which act he detested and for which he never forgave her. She had a small select circle of friends, chosen in childhood.

In the maternal line, the grandparents were extremely wealthy, cultured and had high social position.

III. *Analysis of mental integrations:*

a. *Intelligence.* The patient attended a private preparatory school but entered the Navy and remained for several months until the armistice in 1918. The next year he was tutored for admission to a naval academy. He attended this academy for two years, but was forced to resign because of insubordination and alcoholism. He worked for a newspaper briefly, then went to a university for a year until his marriage in 1921 to his first cousin. He learned easily, was capable, original and brilliant in school. Later, he was considered well informed and talented. He continued in newspaper work for the next 11 years here and was abroad for about a year. For several years after leaving school, he wrote feature articles for a well-known magazine, then engaged in radio advertising, earning $6,000 annually. His work was always of high caliber. In 1930, the year of his divorce, his employers gave him opportunities for great promotion but he was dismissed because of drinking. He held another, similar, position but lost his job and further prospects in the field. Mental examination revealed a clear sensorium.

b. *Conation.* The patient's will or urge to expression showed no outstanding features during early life, but as he grew older there became evident a weakening in his ambitions. His social drives in earlier periods were superficially of fairly satisfactory

quality. He was considered a leader in school, especially in literary activities, in which he was obviously talented. He was also well known through drinking, drug addiction and sexuality. He was fairly successful in his professional activities but, as far as his total social adjustment was concerned, became more and more of a failure.

c. *Temperament.* He was sweet-tempered as a child and was reputed to have had many friends and playmates. His "emotional set" was directed toward a gradual deviation from further goal formation and an increasing tendency to take flight through drugs, alcohol, sexuality and attempted suicide. The patient may be classified under Henderson's "aggressive types of psychopathic states" (suicidal, alcoholic and drug addict, sex variant), also in the "predominantly inadequate types" especially in reference to moods; or under Bleuler's "abnormal instability" or "aberrations of the sexual impulse" types; Aschaffenburg's "chance-affect-opportunity" type; or Kahn's types including hyperthymic and hypothymic tendencies, with "ambitendent" tendencies (ego vacillating between self-assertion and self-surrender) with leanings toward the "passive autist" in his weakness of ego and tendency to take flight from environment.

d. *Affect-emotion.* The following information is a summary of the patient's mental integrations before entering the hospital.

As a child, he was afraid of his father who became extremely angry at him for some unknown reason, when the boy was 16. As a boy, he masturbated and had pronounced guilt feelings. At school, he was popular and sociable and was reputed to have been the most popular boy in his university class. Later, all his friends were drinking friends. His alcoholism dates from his sixteenth year. Both he and his wife were heavy drinkers and continually held parties. He lost his highly-paid positions through drinking. He was irritable and angry before drinking spells, but depressed and brooding following them. Thought that drinking ruined his marriage and career, and wanted to turn all drinking parties into sexual orgies. His sex life was extremely active. He entered the hospital to rid himself of his chronic periodic alcoholism.

He contracted the heroin habit twice. In Paris, a girl taught him to use the drug. He would sniff it and have intercourse afterward.

It gave him a "marvelous feeling" the first few weeks; after that, it was "squalid." He broke away from heroin. He formed the morphine habit only temporarily during his second trip to Europe.

His wife's family turned against him after the suicide of his father, and his marriage appeared ruined. He spent all his money abroad, feeling inferior to his wife because of her family, wealth and position. In 1931, his wife procured a divorce after they had both been on prolonged drinking bouts, but they continued to see and to live with each other until a short time before his admission. Shortly after the divorce, he attempted suicide by taking an overdose of allonal, but recovered in a hospital. During the past five months, he has been moody and depressed, wandering about the country. He was psychoanalyzed twice for brief periods by two reputable psychoanalysts in Europe and America. The father's death greatly affected the patient and following the death, his drinking and antagonism to his mother increased. Divorce left him depressed and hopeless.

In the hospital, he stated that he respected his father greatly and sided with him in marital difficulties. When "tight" he would be totally preoccupied with his father's death, trying to imitate the manner in which it occurred. Just prior to admission, his drinking, worrying, moodiness, depression and despair increased. He would stare into vacancy, stated that he was going to commit suicide—to follow in his father's footsteps. He took an overdose of allonal, but survived. During the last month, he was moody, sat about, buried his hands in his face, saw no friends, went nowhere. He talked a great deal about his being a failure, saying that he should end his life.

e. *Character.* In character, this patient represents a type that will probably need institutionalization at different intervals for the rest of his life. His somewhat promising earlier life has shaded into an existence of ill-boding nature. His reactions of flight, dependence and destructiveness are becoming more chronic. Because he is probably beyond the stage where much psychotherapy will aid (except in the matter of a protecting environment), he is becoming an "institutional character."

Case C

The material on this patient is unusually rich but it is possible here to make only brief mention of the salient points.

I. *Physical status:* No abnormal findings were obtained.

II. *Family:* The patient came from a family distinguished for its attainments, but noted for marked instability. The family life, because of its unstable emotional organization, contributed many unfavorable influences to his development. The father, a taciturn man, would give in to his wife without struggle but used to engage in long domestic wrangles when the patient was small. The mother was considered sociable, but otherwise was nervous, moody, dominating, attempting to dominate the lives of her children even after maturity. A sibling was considered psychopathic.

III. *Analysis of mental integrations:*

a. *Intelligence.* The patient was brilliant in school, talented in painting, and earned an advanced academic degree. He became well known as a lecturer, author and writer.

b. *Conation.* The patient's will or urge to expression found many avenues—athletics, warfare, painting, writing, lecturing. Also, his urge toward sexual satisfaction was directly persistent over a long period of time. All of his athletic, sexual, intellectual and artistic drives, however, availed little or nothing in the problem of adjustment to society as a whole. In fact, he became increasingly deficient in his attempts at social adjustment. Again is seen a relative conative success within circumscribed areas of the patient's total sphere of life action, but a failure in his general adjustment. The failure in his drive to socialize his energies is responsible for his failure as a person.

c. *Temperament.* The patient's "emotional proneness" tended toward a nonconstructive distribution of his energies, which in turn contributed to a process self-destructive to his integration as a creative person. He could be classified under Henderson's "aggressive types of psychopathic states" (attempts to injure self --was suicidal on numerous occasions and a sex variant). While talented, he could not be considered in the genius type. Classification would also place him in Bleuler's "aberrations of the sexual impulse," "elements of nervosity," "abnormal irritability," and

"instability." As to trends toward criminality, he had death wishes against a person (affect criminal—Aschaffenburg). In Kahn's terms, he could be classified between the hyperthymics and hypothymics (not among the poikilothymics). He is ambitendent (ego vacillates between self-assertion and self-surrender).

d. *Affect-emotion-character.* The patient's circle of boyhood friendships was limited and of dependent nature. He was considered aloof, somewhat austere, meticulous, and never participated in general social activities. Moodiness, stubbornness and sullenness have also been characteristic, yet he has shown responsiveness to hospital treatment and has had relatively steady interludes between hospitalization. Rather early, he manifested homosexual interests which increased as the years passed, becoming morbidly overt. Pornography and prostitution also attracted him. He became a solitary and "spree" drinker. His actions caused him to forfeit extensive professional opportunities. A number of suicidal attempts have been made. The patient has already begun a series of institutionalizations which will probably be frequently repeated. Here again are manifested characterial reactions of chronic deviate sexuality, flight, and destructiveness in an intellectual.

Summary

The analysis of these cases shows that:

1. The psychopathic defective is suffering from various arrests in the development of his mental integrations described as conational, temperament, affective-emotional, and characterial—as is also true of the superior psychopaths. The underlying problems of the psychopathic defective are essentially identical with those of the superior psychopaths.

2. The mental integrations described as intellectual simply give color and direction to the abundant energies with which all three patients have been endowed. The direction of these energies becomes a misdirection through the influence of the other mental integrations.

3. Each patient has been successful, according to the powers of his total adaptability, within certain restricted spheres of activity

but unsuccessful in social orientation to a life goal, its attainment, and the inclusion of group life.

4. Adequate social treatment early in life, and continued community assistance when needed, might have moulded the energies of these patients into constructive purposes. Easy access to institutional assistance is definitely advised; even permanent institutionalization may be needed, after a certain fixation in habituations makes the patient dangerous to himself or to others.

5. It can be emphasized that the psychopathic defective is suffering from severe mental aberrations similar to those found in the superior psychopaths, for whose problems society has not yet made adequate provision. Accordingly, the State schools, which are organized to handle the many socially inocuous or socially-minded defectives, should receive immediate assistance in caring for this type of patient through either a special unit or an independent organization.

Letchworth Village
Thiells, N. Y.

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THE PROBLEM OF TREATING PSYCHOPATHS*

BY L. P. O'DONNELL, M. D.

In considering the treatment of psychopaths, this paper is limited in sphere to those designated "psychopathic personality" in the classification of mental disorders accepted by the American Psychiatric Association. Cheney[1] defines this group as those "characterized largely by emotional immaturity, or childishness, with marked defects of judgment and without evidence of learning by experience. They are prone to impulsive reactions without consideration of others and to emotional instability, with rapid swings from elation to depression, often apparently for trivial causes. Special features in individual psychopaths are prominent criminal traits, moral deficiency, vagabondage and sexual perversions. Intelligence, as shown by standard intelligence tests, may be normal or superior, but, on the other hand, not infrequently a borderline intelligence may be present."

One finds the group referred to under many different labels in the literature, among which are "moral insanity," "moral imbecility," "constitutional psychopathic inferior," "psychosatipath," "sociopathic," "psychopathic state" and "psychopathic personality." "Sociopathic" was preferred by Partridge[2] as "expressing the most distinctive and unifying trait of the class." Henderson[3] designates as psychopathic states the condition of "those people well endowed intellectually but so emotionally unstable as to be unable to fit harmoniously into the fabric of society." Hinsie[4] says of psychopathic personality that this term "comprises a psychiatric group because of what it is not," that is, other clinical groupings having been ruled out, one may then describe what he sees. Bender[5] states that psychopathic personalities result from things that may happen to the child's maturing brain in its functon as the integrating organ of personality. She lists as follows the things that may happen: birth injuries to the subcortical areas, head traumas, encephalitis, and possibly constitutional defects of the same region; finally, deprivation of the normal emotional, social experiences that come to the preschool child through its family attachments and its attempt to solve the Oedipus situation. After a careful considera-

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tion of the various conceptions, one realizes that other than a general idea of the individual reactions of psychopaths to society, very little is known of them.

It is interesting that such a small number of patients entering mental hospitals are diagnosed "psychosis with psychopathic personality." One reason is that we find many of these individuals showing such definite mental reactions that they are classified in other groupings, such as manic-depressive psychosis, alcoholic psychosis, et cetera. We also find that those psychopaths who are hospitalized during an episodic attack make a rather rapid recovery, but the basic personality remains unchanged.

With this thought in mind, 36 case histories of patients admitted during the years 1936-37 and 1937-38, diagnosed "psychopathic personality," were studied. Thirty of these were considered psychotic and 6 without psychosis. The six without psychosis were males. At the time of admission 13 were of ages 17-27; two 27-37; seven 37-47. Six males and 6 females had a history of mental disease in the family (father in 3 cases, mother in 2, brothers in 4, sisters in 1, aunts in 3, grandfather in 1). Six patients with no history of mental disease had emotionally unstable parents, thus giving a total of 18, or 50 per cent, with some known familial taint. Estimation of intelligence classed 22 as average, 8 dull normal, 6 borderline. Twenty-one, or 58.3 per cent, showed their first marked behavior difficulty (truancy, stealing, sex irregularities) before the age of 15, and 32, or 88.8 per cent, before the age of 25. In the psychotic group 16, or 52.7 per cent, developed psychoses before 25, 28, or 90.3 per cent, before 40 years of age. The types of psychotic reaction shown were emotional instability (17), depression and paranoid trend (5), paranoid trend (8). The number of admissions for individual patients varied from 1 to 8, 18 having two or more admissions. The average duration of hospitalization was 6 months, 21 days.

At the present time, 26 of these patients have been released, 17 discharged, 9 paroled. Of the 17 discharged, 6 were without psychosis. Of this number two were discharged to their own custody. No further reports could be obtained. Three were turned over to the parole commission at the time of discharge. One is known to have been returned to Riker's

Island and is there at the present time. Another was sent to Kings Park State Hospital. One who was discharged returned to court, and was later admitted to Rockland State Hospital. Of the 11 with psychosis, 4 were discharged as recovered, 3 following one year's parole, after which no further report was obtained. Four much improved, 2 improved and 1 unimproved were transferred to another hospital. Of the 9 paroled, 5 were recovered, 3 much improved and 1 improved. Two of this group have shown very good adjustment and an improvement upon prepsychotic behavior; one has been on parole 4 months, the other 10. The remaining 7 are showing much the same behavior as they did before their psychotic episode.

The following case study illustrates the difficulty in diagnosing and treating this type of individual:

A. S., a white male, age 22, foreign born, lived in the United States since the age of 5 years. Family history on maternal side is said to be negative for nervous or mental disease; paternal side, no history available. The patient was born March 3, 1916, out of wedlock. Birth and early development were normal. Cared for by grandmother until 4 years of age, then came to the United States with mother, boarded out for two years with a family, later taken home. As the mother worked, he spent much time on the streets. At the age of 8 he was placed in a foster home where he did not adjust well, fighting with and tantalizing other children, but where he remained until 12 years of age. Went to England on visit with mother. Upon return was placed in a school where he was described as a "pest," taken out and at the age of 13 sent to the Connecticut Junior Republic School. After doing well for three months he became uncooperative, argumentative and was considered a "trouble maker and lazy loafer." At 14 he hospitalized for a physical illness. After recovery he was tried in another home, could not get along, and was finally placed in a school for boys. While there, at the age of 15, stated he had swallowed tacks, pins and glass. He was sent to a mental hospital. There he stated, with a smile, that he "was sick of living." He did not appear depressed. Said he swallowed tacks to see if the devil had real power. Told that a great war was to take place and that he was to be leader of the armies. X-ray of gastrointestinal tract was negative for foreign bodies. Later he denied statements that he had made at time of admission. Said he made those statements only to leave school. Told of having read of a criminal pretending to be insane so as to be placed in a hospital instead of a prison, so he tried the same thing. He had an I. Q. of 97. The case was diagnosed "psychopathic personality without psychosis." He was returned to the boys' school, where he remained until 16 years of age. The

mother remarried and tried to make a home for him but he became resentful and jealous. At 17 hitchhiked to Chicago World's Fair, and has drifted about ever since.

At the age of 18 he was admitted to a New York City hospital, after having threatened to jump from Brooklyn Bridge, supposedly because of destitution. At this time he spoke of having felt inferior for many years, then developed what he called a "superiority complex" and withdrew from people, feeling he was above them in intelligence and cultural interests. He had been very lonely; sometimes had strong aggressive feelings toward people; felt like killing them, also himself; he attempted suicide. At times he seemed unusually immature on the ward and made persistent attempts to annoy others. Diagnosed "psychopathic personality," he was returned to his home state by the authorities, as a nonresident. He was again admitted to a mental hospital in March 1936 on his own request, to get straightened out educationally and to learn to cope with life. Stated he had vague fears and abnormal tendencies. He was described as being antagonistic toward his mother. Showed poor judgment, was quiet and cooperative but rather adolescent in attitude. Discharged to the mother's care, he resumed life as a drifter. At the age of 22 again entered a New York City hospital, requesting hospitalization. Said he was a descendant of a well-known author and that he had just published a book. "I have certain periods in my life. I get discouraged. I am not a criminal and I feel this way. I just go to a place where I can be taken care of and I regain ego." He was committed to a state hospital where he continued to express vague grandiose ideas, as well as a feeling that he had to commit some crime or attack young boys and girls. He expressed homosexual desires and gave the impression that he felt it was necessary for him to be hospitalized because of these. He refused to do work of any kind, was disagreeable, talkative and boastful, teased the older patients on the ward. He was diagnosed "psychosis with psychopathic personality, episodes of depression and sexual abnormality."

This case illustrates aptly the problem of determining when a psychopathic individual is psychotic and when he is not. Is he lying when he goes to the hospital, or after he is here a short time and becomes dissatisfied? This, of course, can only be determined by a thorough study of all factors in the case, especially the motivation for making the statements.

It is noted that the majority of psychopaths in the group studied became more stable in the hospital, but showed after release a gradual return to their previous psychopathic behavior. Some discharged as without psychosis were returned soon afterward to

other hospitals. This would indicate the need for a place in which might be treated psychopaths without psychosis, those who recover from a psychotic episode, and another large ill-defined group. This last includes many not found in state hospitals, but is made up of vagabonds, criminals and other maladjusted individuals.

The attitude toward treatment in this group of individuals is generally pessimistic, judging from the literature. Dooley,[6] speaking of psychopathic women, says attempts at psychoanalysis in that group met with little success. O'Malley[7] says: "Psychoanalysis as a therapeutic measure for the psychopathic personality seldom produces satisfactory results; in fact it has proven a failure whenever an attempt has been made to apply it to individuals." According to Visher,[8] "Treatment of the psychopathic adult by psychotherapy, reeducation and hospitalization is of but little avail. Vocational guidance is theoretically indicated but practically is unusually unsuccessful." Hinsie[9] says under treatment for this group that, except in very mild cases, little can be done. On the other hand, when one sees the apparent similarity between behavior in this group and in those behavior problems following encephalitis; when he reads the encouraging reports by Bond and Appel[10] with this group in their hospital school; when he considers McCartney's[11] results in rehabilitating prisoners, as well as the well-known results obtained in training mental defectives, he can but realize that much could be done to help this group of individuals become better adjusted socially. Henderson[12] has a more hopeful outlook than some of the others and believes that much can be accomplished by the psychobiological methods of study and treatment.

It is evident that the treatment of the psychopath is one of individual study to determine all of his liabilities as well as his assets, and the use of this knowledge in bringing the patient to a proper understanding of what constructive place he can take in society. It seems to the writer that in child guidance clinics, in C. C. C. camps, and with increased educational facilities accompanied by insight and interest on the part of educational leaders, excellent opportunities are now afforded for the study of the individual's adjustment to the group. He can be taught how to take his place in society by learning fair play, respect, and faith in his associates. Furthermore, every individual has the advantage of going to school and

learning a trade in order to be equipped to take a place in society satisfactory both to the individual and to this society. If proper use is made of these facilities, it would seem that much can be done to prevent or modify psychopathic reactions. Even if every possible advantage is taken of them, the problem remains of what to do with those who do not improve or reach mature judgment until late in life and those (similar to the group studied) who recover from an acute episode but require further assistance in making proper adjustments to society. For these individuals vocational schools might be established to which they could be committed for training, the length of commitment to be determined by the person's ability to adjust, as evaluated by the psychiatrist in charge.

These schools could be organized so as to enable the patient to choose a vocation within his capacity which would equip him to earn his living after leaving the school. While in the school, the patient would do much the same as that person who works his way through school. A part of his day should be given to work necessary for the maintenance of the school, for which he would be allowed compensation, from which reimbursement would be made for his education, clothes and board. A very careful psychiatric check should be made on each individual to determine whether or not he is suited for this type of training. There would naturally be some failures among those treated in this manner. As for these, also others not suited for this type of training and who could not be treated in mental hospitals, neither they nor society would benefit by their receiving jail sentences for misconduct. It would seem logical to establish a colony in which they might live, considering them incurable, as has been done in the case of some cardiac, tuberculous and other physical disorders. Psychiatric principles should be used in the care of those in this colony; the patients should work if they are able, be compensated for this and charged a reasonable amount for their care and maintenance. The problem of establishing such a setup is first and foremost the general public's reaction, particulary to the colony idea. This method of treatment would be rendered void if the individual could leave when he desired. A request to leave before the psychiatrist in charge sees fit, should be referred to a board of at least three psychiatrists who have had experience in the treatment of this type of individual. The writer be-

lieves that the results for the psychopath of this type of treatment would more than justify the cost.

If we do not establish some such method of treatment, we will continue to see these individuals come into conflict with society, receive determinate prison sentences and return to society only to repeat their offenses. Those who become psychotic will recover from the particular episode, to be released with the statement all too frequently made today, "recovered from episode, still a psychopathic individual."

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AN APPROACH TO THE PROBLEM OF PSYCHOPATHIC PERSONALITY

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The problem of psychopathic personality is one that concerns the sociologist, the educator, the magistrate or lawyer, the physician, the psychologist and the psychiatrist. It particularly affects the psychiatrist, because more and more he is being called upon to give an answer to the ever-pertinent question: "What is to be done with the psychopath?" Every year a number of individuals enter the state hospitals, who seem to fall into the diagnostic category of psychopathic personality. However, relatively few are found there as compared with the number which actually exists in each community. They are usually sent to the hospital only after the appearance of a psychotic episode, making them eligible for legal commitment. The majority seem not to develop such episodes, and consequently do not come under the observation of the state hospital physician. For example, during the 15 year period from 1920 through 1934, the average distribution of "psychoses with psychopathic personality" among first admissions from New York City to all institutions for mental diseases in New York State was only 2.17 per cent. At Creedmoor State Hospital during the fiscal year 1937-38, the total number of patients admitted and diagnosed as psychosis with psychopathic personality was only sixteen, 2.1 per cent of all first admissions during that year.

In the community clinics, conducted under the auspices of the Department of Mental Hygiene, a larger number undoubtedly comes to light, but by far the greatest is encountered by the psychiatrist associated with the courts and prisons. Nevertheless, it behooves all physicians in the state hospitals to become familiar with the various aspects of psychopathic personality, for it seems obvious that as each hospital becomes increasingly active in dealing with the mental hygiene problems of its locality, its staff will be called on more frequently to give advice and to treat the psychopath.

It is agreed by numerous writers in the field of psychiatry, that the concept of psychopathic personality is vague and almost limitless. At the present state of acquaintance with this subject, it cannot be otherwise. After reviewing some thirty definitions of the

term, this author finds that, for practical purposes, the one given by Cheney[1] contains the essence of the generally accepted notion. He states, "Psychopathic personalities are characterized largely by emotional immaturity or childishness with marked defects of judgment and without evidence of learning by experience. They are prone to impulsive reactions without consideration of others and to emotional instability with rapid swings from elation to depression, often apparently for trivial causes. Special features in individual psychopaths are prominent criminal traits, moral deficiency, vagabondage and sexual perversions. Intelligence as shown by standard intelligence tests may be normal or superior, but on the other hand, not infrequently a borderline intelligence may be present."

Bromberg and Thompson,[2] working in the psychiatric clinic of the New York City Court of General Sessions, summarized their findings concerning 10,000 criminals. In their opinion, only 6.9 per cent of this group belonged in the classification of psychopathic personality. They limit this term to those "whose exaggerations of emotions are not only beyond the individual's control but are unmodifiable by present methods of treatment." They feel that antisocial behavior is not sufficient evidence that an individual is a psychopath. They classify psychopaths on the basis of personality characteristics, such as schizoid, paranoid, cyclothymic, sexual and explosive (epileptoid) types. Also included are drug addicts and those whom they consider constitutional inferiors.

Partridge,[3] reviewing the concept of psychopathic personality, states that the attribute most common to psychopaths is antisocial behavior, and therefore prefers to use the term "sociopathic." However, care must be taken to avoid an all-inclusive attitude, for it does not logically follow that all those guilty of antisocial acts are psychopathic.

The psychoanalytic literature speaks of these individuals as having character disorders, and analysis of a number of such people has thrown some light on the psychodynamics motivating these disorders.

How to attack the problem of the psychopath, no one can say dogmatically. Indeed, the situation appears at first to be hopeless and insurmountable, but considering the present state of our knowl-

edge, a fatalistic attitude is not yet justifiable. With Henderson[4] and others, the writer is somewhat optimistic and feels that psychopathic states "are much more modifiable than has been supposed." This impression resulted from the personal experience about to be related.

The magistrates' courts of New York City are the first to receive the defendant charged with anything from vagrancy to murder. Where the charge is of serious character, that is a felony, the case is transferred to a higher court for action. However, many of the cases that appear before the magistrate are misdemeanors to be disposed of by him. These include vagrancy, mendicancy, sexual perversion, alcoholism and drug addiction. The usual procedure was to determine whether or not the individual was guilty as charged, and then to pronounce sentence. The sentence imposed might be a few days, one month, six months or an indeterminate length of time in a penitentiary. After the prison term had expired the person was allowed to go on his way, in many instances only to appear again in court some weeks or months later, charged with the same transgression. Then came a more severe prison sentence with eventual release and subsequent iteration of the process. Thus the punitive cycle kept going its futile way without anything constructive being accomplished, from the point of view either of rehabilitation or of prevention of recurrence of the asocial act.

During the years 1934 and 1935, the author had the opportunity of serving as examining physician for the mendicancy service of the New York City magistrates' courts. In that capacity he performed physical and mental examinations on a large number of individuals who might be termed psychopathic personalities. The mendicancy service had been created with the view of finding out what was a mendicant and what could be done to decrease mendicancy. One might as well have substituted the word "psychopath," for many of those classed as mendicants readily fitted into the concept of psychopathic personality as defined above. The service group consisted of social investigators, statisticians and physicians, two of the latter trained in psychiatry. In several of the magistrates' courts in Manhattan, Bronx and Brooklyn, a part of this service was stationed, and cases referred by the judges were

examined as to social background, as well as mental and physical status.

It is interesting to note how the service was at first received. There was widespread amusement among the court personnel at the thought that anything could be done for the defendants. The members of the group were good-naturedly called the "social workers." Early in the life of the project, considerable efforts were necessary in order to sell the idea. Most of the judges were lukewarm, a few enthusiastic, one or two openly hostile. At one extreme was a very enthusiastic, enlightened magistrate who, in effect, said this: "For many years these types of individuals have appeared before me. I have not really known what to do with or for them. I followed the path of least resistance and meted out punishment in the form of jail sentences of varying duration. It appears to have done no good. Now you see what you can find out, and I shall be guided whenever possible by your recommendations." At the other extreme, was the judge who at first refused to refer any cases to the group. In effect his attitude was this: "These 'bums' are no good. Your attempts to coddle them will do no good. No matter what you do for them they would not change. Anyway, I'm the judge here. I know the law and how to handle these people, and I don't want a bunch of 'assistant magistrates' telling me what to do." Eventually, he too was won over.

As a specific illustration of the type of work the service performed, the following case is cited:

A young man, age 24, was arrested on a charge of vagrancy and brought before the court. The judge referred him to the mendicancy service, where the writer had the opportunity of examining him. Because of his pallor, his emaciation and the pustules on his arms and thighs, it was not difficult to determine that he was a drug addict. He refused to admit the truth of the diagnosis, insisted that he was being "framed" and became verbally abusive. After attempts were made to convince him that all efforts were in his behalf, he became fairly cooperative and allowed one of the investigators to interview him about his past history. It was discovered that this young man had abruptly left his home in the south about one and a half years previously, following a disagreement with his father. He had traveled over a large part of the country, had been

arrested in several cities for vagrancy, and in the past year had resorted to the use of drugs. His fingerprint record showed that he had been arrested only four months before the present instance, and had been sent to jail for 10 days where his status as a drug addict was not ascertained. Ordinarily, this individual might again have been sent to jail for an even longer period, only to leave at the end of his term and repeat the same succession of events. In this case however, the magistrate was guided by the recommendations of the service. The defendant was sent to a hospital for several weeks for a drug cure. In the meantime, one of the investigators had established communication with the man's family; a short time after he left the hospital, a reconciliation was effected.

Another instance is that of a boy, age 16, arrested in a subway toilet while performing mutual masturbation with another boy. The investigation revealed that he was the son of a lawyer, a good student and well thought of in his community. However, he had furtively indulged in various homosexual practices for several years without having been previously discovered. The customary disposition of this case might have been as follows: a severe reprimand from the judge with probably a suspended sentence. A further step was taken. The boy was seen privately in the judge's chambers, thus sparing him the humiliation of appearing before a crowded courtroom. His father was interviewed and impressed with the necessity for referring the boy to a psychiatrist. The advice was followed.

In general the following was the procedure taken in all cases referred to the service: The defendant was first given a routine physical examination. Any abnormalities found were noted. Then followed a modified psychiatric interview by the psychiatrist, to determine the presence of any gross mental abnormality. After this, the defendant was interviewed by a social investigator in order to obtain information on his social background. Finally, a comprehensive report was sent to the magistrate. In those cases where it was thought possible to help the individual in attempting rehabilitation, it was recommended that sentence be suspended and that he be returned to the service for help and followup. When physical examination revealed the need for additional workup or treatment, hospitalization or attendance at an outpatient clinic was advised.

When mental examination indicated the possibility of a psychosis or mental deficiency, the service urged hospitalization for further study at the Bellevue and Kings County Hospital observation wards. Not invariably, but frequently, the judges followed the recommendations made. The individual was assigned to a social investigator, whose duty it was to find for him shelter, food and clothing if he needed it. If care for physical illness was required, the worker aided the individual in securing hospital treatment. A definite effort was made to obtain work for as many as possible. Here the great handicap was the scarcity of jobs, yet frequently it was possible to secure at least some temporary employment which the man himself might not have obtained unaided. Some of the referrals were sent to Camp La Guardia, which was organized somewhat in the nature of a labor camp. At frequent intervals the cases were contacted by a social investigator, each investigator having a certain case load. Each week a number of individuals were seen by the psychiatrist for psychotherapeutic talks and discussions of the particular problems.

In the event that a defendant was sentenced to a penitentary, a note was made of this, and shortly before his release he was seen by an investigator who laid the ground for the attempt at rehabilitation. After release from prison, he was aided in the same fashion as outlined above. Seeing the prisoner while he was still in the penitentiary was considered so worthwhile that eventually a branch of this project was stationed at the penitentiary on Welfare Island.

This service went on with its work for a little more than two years. On several occasions it was almost terminated because of lack of funds. It finally expired from that cause. One may ask: "Was this project worthwhile?" "Did it achieve anything of a constructive nature?" In answer, it must be said that its achievements are today not tangible. After the service disbanded, followup of cases was stopped and there would seem to have been no attempt to continue. While the project was active, constructive rehabilitation work was accomplished. It was a definite approach to the problem of psychopathic personality. At least one magistrate, a woman, was so impressed by its value that she has since carried on herself a somewhat similar service in whatever courts she sits. That is, she has with her a group of volunteer workers who perform the

same functions as the social investigators of the former mendicancy service. As far as the writer knows, however, no physician or psychiatrist is associated with her group.

There were limitations to this project. For the most part it did not have a personnel trained in research technique. It lacked a psychologist on its staff. One trained to administer and interpret the Rorschach test undoubtedly would have found out a great deal about the so-called "personality structure" of the psychopath. There were only two psychiatrists in the group, a number altogether inadequate. The service was literally swamped with clients and lacked the time in which to do anything but a superficial workup. In spite of limitations, it did have some advantages. It provided a machinery for dealing with the psychopath (or "sociopath") in some therapeutic fashion, in contrast to the generally accepted method of treating him by some form of punishment. It sought to concentrate its efforts on the first offender, in the belief that he might be more amenable to such a program. It brought to the magistrates' courts a psychiatric approach which was almost totally absent at that time. It was an important factor leading to the establishment of a psychiatric clinic at the Riker's Island penitentiary.

Is a service of this type needed? It most decidedly is, and on a permanent basis. The writer wishes to quote from a report by the Citizens Committee on the Control of Crime in New York,[5] which gives the results of a study during a 17 months period on a group of 2,022 defendants charged with committing sex offenses: "In their very nature sex offenses are marked by factors that call for something more than the highly legalistic routine which still dominates our courts. Ideally, it should be the *offender* and not the *offense* that comes before the jury and court. An attempt to reach this basis is made through the reports of probation officers when the offender has been convicted, and comes to the bar for punishment, but it is no more than an attempt. Society is denied protection from the guilty who escape conviction, in whatever way, and the offenders themselves are denied the rehabilitation that might be made possible for them . . . Scores of men are to be found among the 2,022 defendants included in this study who would be rated as abnormal under almost any other standards than those of *legal* in-

sanity and mental deficiency which govern procedure under present laws. There is no provision for *medical* judgments, nor for any hospital or other institutional care, except that provided for the insane and the defective . . . For such persons as these, and for those who are, for any variety of reasons, emotionally unstable or maladjusted, there should be some other procedure than that which now controls our courts. Determination of mental status is a medical problem. Yet under the New York law an offender may not be committed unless he be found *legally* insane or a mental defective. Many persons, whose conditions do not fall within the latter categories are freed or sent to prisons, although they are definitely psychopathic personalities . . . Of the 2,022 persons involved in this study, only 246 were subjected to mental examinations."

The committee concludes its survey by urging a further inquiry into the situation. Since it is a community matter, the inquiry should be undertaken by a special committee, which might include law enforcement officers, district attorneys, psychiatrists, physicians, and laymen who have had experience in the field. It is suggested that a number of specific objectives be sought in this investigation, such as the following: (1) To seek for a uniform court procedure in the matter of examining the defendant's mental condition. (2) To clarify and consolidate the existing laws governing such procedure. (3) To determine the extent to which judges decline to commit abnormal convicted offenders to hospitals, but place the responsibility for such action upon prison authorities. (4) To consider the need for simplifying the statutory definition of sex offenses and the statutory provisions for dealing with them. (5) To formulate an entirely new procedure for dealing with sex offenses, if the results of the above studies indicate such a need.

In the author's opinion, what this committee has said about the specific problem of sex offenses can readily be applied to the general problem of the psychopathic personality. The situation requires a comprehensive, well-organized research program which should first of all simplify the one huge problem by subdividing it into its smaller components. These include the sociological, economic, educational, psychologic, psychiatric, medical and legal aspects. The findings in each aspect could then be coordinated to afford a composite picture of the psychopath. Without a unified re-

search program no progress may be made towards understanding these individuals. With it, a solution may eventually be at hand.

Summary

1. Psychopathic personality is a community problem which merits attention and study on the part of the State hospital psychiatrist.

2. The generally accepted concept of psychopathic personality has been reviewed.

3. The activities of the mendicancy service in the New York City magistrates' courts have been outlined and its limitations and advantages noted.

4. A plea is made for an approach to the problem of the psychopathic personality similar to that used in other problems in medicine, namely, a comprehensive research program.

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THE NEUROPATHOLOGY OF BENZEDRINE POISONING

BY PURCELL G. SCHUBE, M. D., AND NAOMI RASKIN, M. D.*

There has been much experimental work reported to establish benzedrine sulphate as a sympathomimetic drug and describing its value in certain neurologic and psychiatric conditions. To the best of our knowledge there have been no studies on the neuropathological results following its administration. It is our purpose to present such a study.

Method

Thirty-three guinea pigs and six white rats were used. The drug was used in sterile solution and injected subcutaneously. Twenty-six guinea pigs served as controls. Animals not dead at the conclusion of the experiment were killed with ether immediately. All animals were autopsied as soon as they were dead.

In addition to routine neurocytological stains the vascular bed of the brain was studied by means of the benzidine stain which is particularly adapted to the study of vessels wherein congestion and stasis are present.

Group 1: Ten guinea pigs were injected daily with the drug for three months; 3 received 0.066 mgm., 4 received 0.133 mgm., and 3 received 0.266 mgm.

Group 2: Two guinea pigs received 0.1 mgm. and two received 0.2 mgm. of benzedrine sulphate for 2 months; at the end of this period, those receiving 0.1 mgm. were given 1.0 mgm. of the drug on successive days, and those receiving 0.2 mgm. were given 10 mgm. of the drug on successive days.

Group 3: Sixteen guinea pigs and six white rats were given the drug in single doses ranging from 20 mgm. to 100 mgm., i. e., large toxic doses. In these animals the dosage of benzedrine was distributed as follows: 20 mgm., 2 guinea pigs; 30 mgm., 2 guinea pigs, 1 rat; 40 mgm., 2 guinea pigs, 1 rat; 50 mgm., 4 rats; 60, 80, 90, and 100 mgm., 2 guinea pigs each.

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Results

The results of this study are briefly as follows:

Group 1: No animals died. In behavior they were restless and "nervous." In one animal receiving 0.133 mgm. there was a cerebellar hemorrhage.

Group 2: One animal (she was pregnant) in the 0.1 mgm group died after the first dose of 1.0 mgm. A cerebellar hemorrhage was found. In all of the 0.1 mgm. group there were congestion, dilatation, and stasis of the meningeal, cerebral, cerebellar and choroid vessels.

All of the animals in the 0.2 mgm. group died after the third dose of 10 mgm. In all there were congestion, dilatation, and stasis of meningeal, cerebral, cerebellar, and choroid vessels. Blood was found in the ventricles and hemorrhages in the subarchnoid space of the brain and cord, in the pons, midbrain, tegmentum, and cord.

All the animals in this group had exhibited restlessness and "nervousness."

Group 3: One guinea pig (also pregnant) died that received 20 mgm. All animals died that received 40 to 100 mgm. Clinically they showed a progressive syndrome of restlessness, "nervousness," chattering of the teeth, chewing, shaking of the head, shivering, asthenia of fore, then hind limbs, convulsions, death. Pathologically, they presented congestion, dilatation, and stasis of meningeal, cerebral, cerebellar, and choroid vessels. Hemorrhages were found in the subarachnoid space, cerebellum, pons, medulla, thalamus, and frontal, parietal, and occipital lobes.

Discussion

Benzedrine has received much attention in recent psychiatric literature because of the beneficial effects which it has had upon intellectual functions, behavior problems, certain mental disorders, and some neurologic syndromes. With the results which have been obtained in this respect, interest should center about the reasons for their occurrence, and what lesions may occur in the central nervous system subsequent to administration of the drug. Since no benzedrine deaths have been reported, human data are not available. In their absence and although the results of animal experi-

mentation are not necessarily comparable, animal experimentation is justified in view of the leads it may offer in the application to human beings.

In this study the neuropathology consisted solely of vascular changes, i. e., stasis, congestion, dilatation, and hemorrhages as demonstrated by the Lepehne-Pickworth preparations. This dilatation of the blood vessels with congestion and hemorrhages indicates a marked degree of circulatory disturbance which terminated in moderate stasis of the blood stream. There were no significant cellular changes.

We are, of course, faced with an interesting problem: Can these changes be correlated in any way with the neuropsychiatric findings observed in human beings? It is possible if the changes are regarded in the light of recent experimental work on neurocellular metabolism and its dependence on an adequate steady blood supply. As has been stated, benzedrine is a sympathomimetic drug. One of its actions as such, in the vascular tree, is the production of increased blood pressure. This, in turn, within reasonable limits increases the rate of blood flow, that is, increases the quantities of nutritional and oxidative elements available to nerve tissue. This increased supply, if used, would make possible the apparent intellectual and emotional improvements observed. As long as the quantity of benzedrine is held at a therapeutic level, beneficial results may be observed. If this is not done and the quantity is increased beyond the optimum limit then subsequent vascular changes may occur such as were observed in our animals. These changes and their physical concomitants are nonspecific for benzedrine but occur following the injection of many sympathomimetic drugs.

Summary

The clinical manifestations and accompanying neuropathology of benzedrine administration in guinea pigs and rats are described.

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A SIMPLE EXPERIMENTAL DEVICE FOR THE PREDICTION OF OUTCOME OF INSULIN TREATMENT IN SCHIZOPHRENIA*

BY ZYGMUNT PIOTROWSKI, PH.D.

Several years of experience at the New York State Psychiatric Institute and Hospital have demonstrated that the Rorschach method can be utilized as an instrument of prognosis for schizophrenics who are to be treated with insulin.

The test material of the Rorschach method consists of 10 inkblots, some grayish and some colored, which are shown to the subject one at a time in a prescribed fashion with the request to tell what the inkblots could suggest. There are no time limits or other restricting rules. Properly used, the method is capable of furnishing a reliable and helpful description of the dynamic forces of the subject's personality.[5] A proper analysis of the subject's interpretations of the inkblots, that is, one adhering to Rorschach's methodological principles, requires a synthesis of all the components of the method. It was found, however, that insofar as prognostic significance in insulin therapy is concerned, one component overshadows all others. This single component is the meaningful color response.

The term *meaningful color response* is used to indicate interpretations of a colored part of the inkblot which have either a concrete or an emotional connotation and in which the color of the blotches has been a contributing determinant. Thus, we may have responses such as "blood" for red, "sun" or "canary" for yellow, "grass" or "water" for green, "sky" or "cornflowers" for blue; examples of symbolic color responses are "love" or "revolution" for red, "peace" for green. Some responses may apply to a combination of several colored blotches, such as "flower bed," "anatomical slides" or various fairy-tale scenes. Excluded from the category of meaningful responses are color denominations. A response is classified as color denomination if it contains merely the name or the description of a blotch and if this is considered a satisfactory response by the patient, calling for no additional explanations. The patient must clearly show in his words and by his general behavior that by naming the color of the blotch he has settled the matter to

*This investigation has been aided by a grant from the Brez Foundation. The study emanates from the department of psychiatry of Columbia University.

his satisfaction.[2] Color denominations differ in their psychological and prognostic significance from other types of color reaction.

Data

Rorschach records have been obtained within 10 days before the administration of insulin therapy from 94 schizophrenics who had received no previous pharmacological treatment. Of this number, 74 were diagnosed and treated at the New York State Psychiatric Institute and Hospital, while 20 were patients at the Brooklyn State Hospital. Male patients numbered 52, female patients, 42. All were white. Twenty-seven were between the ages of 14 and 20, the remainder being over 20; the oldest patient was 41 years of age at the time of treatment. The outcome of treatment was evaluated by the clinical staff independently of the Rorschach findings.

Upon the completion of insulin treatment both the improved and the unimproved patients were divided into two groups: one group comprised those patients whose pretreatment Rorschach record contained at least one meaningful color response (indicated in the tables by the sign "+C"), while the other embraced those patients whose record contained no meaningful color response (indicated in the tables by the sign "—C"). The results are presented in Table 1. There is a striking difference between the percentage of patients with "+C" pretreatment records in the improved group and the percentage of patients with such records in the unimproved group, there being 85 in the former and 46 in the latter. Furthermore, *if one were to predict improvement after insulin therapy for all "+C" schizophrenics and lack of improvement for all "—C" schizophrenics, the percentage of correct predictions would have been* 76 *for the entire group of* 94 *schizophrenics. This percentage is statistically significant.*

TABLE 1

Condition following treatment	+C	—C	Total
Improved	56	10	66
Unimproved	13	15	28
Total	69	25	94

When the data are examined more closely, the correlation of the color response with the patient's improvement becomes even more apparent. If the recovered patients and those who improved greatly are placed into one group and those who showed moderate improvement are placed into a separate one, we see that "+C" records were obtained from all recovered and much improved patients, from two-thirds of those patients with some improvement, and from a minority (46 per cent) of those patients who remained unimproved. Thus, Table 2 illustrates the fact that the percentage of "+C" records varies directly with the degree of improvement. One should perhaps emphasize the finding that *no patient without a meaningful color response improved greatly or recovered.*

TABLE 2

	Recovered and much improved		Somewhat improved		Unimproved		Total	
	+C	—C	+C	—C	+C	—C	+C	—C
Absolute numbers	37	0	19	10	13	15	69	25
Percentages	100	0	66	34	46	54	73	27

The presence of a meaningful color response appears to be important not only for the immediate outcome of insulin treatment but also for the future progress of the patient. We have followup data obtained one year or more after the taking of the pretreatment Rorschach record, for 29 of our patients. Many of these patients had relapsed and had to undergo a second course of treatment. It is interesting to note that the subsequent treatments of patients who had shown a "+C" record were much more successful than the subsequent treatments of patients with a "—C" record. Many of the latter failed to improve; in fact, they were worse than they had been at the termination of the first insulin treatment. These figures are as yet too small and thus have little value beyond adding support to the following statement. The relation between the schizophrenic's ability to give a meaningful color response during a pretreatment Rorschach examination, and his capacity to improve after insulin treatment, is not accidental.

Another very important component of the Rorschach method is the *human movement response.* In a human movement response the visual image projected into the inkblot by the subject contains

the element of movement or activity which is physically possible for a human being. The essential psychological criterion of a human movement response is the subject's feeling that the interpreted parts of the inkblots are about to change their relative spatial position. "Dancing bears" in card II, "men lifting a basket" in card III, "women quarreling and trying to hit each other" in card VII, "witches riding on broom sticks" in card IX, are typical examples of such responses. Not every interpretation scored as a human movement response need be the action of a human being. Animals like bears or monkeys, when seen in the act of executing movements of which human beings are capable, are also scored as human movement responses. The ability to give this type of response is of smaller prognostic value than the ability to give meaningful color interpretations, but the presence in a schizophrenic pretreatment Rorschach record of good human movement responses, together with meaningful color responses, appreciably strengthens the possibility that the patient will improve after insulin treatment. This point is illustrated in Table 3 (the sign "+M" indicates the presence of at least one human movement response in the record; the sign "—M" indicates the absence of human movement responses).

TABLE 3

Condition following treatment	+C +M	+C —M	—C +M	—C —M	Total
			Absolute numbers		
Recovered	6	5	..	..	11
Much improved	11	15	..	..	26
Improved	7	3	4	4	18
Slightly improved	5	4	1	1	11
Unimproved	2	11	7	8	28
Total	31	38	12	13	94
			Percentages		
Recovered	55	45	..	..	100
Much improved	42	58	..	..	100
Improved	39	17	22	22	100
Slightly improved	46	36	9	9	100
Unimproved	7	39	25	29	100
Total	33	40	13	14	100

For comparative purposes, the prognostic value of a number of factors was computed on the basis of data available for our patients. These factors comprised: form of dementia præcox (paranoid, catatonic, hebephrenic, simple), age, sex, intelligence level, educational level, type of onset (acute or gradual), and duration of illness. Of all these factors, the last named provided the highest prognostic value. Prognoses might have been made on the assumption that a duration of illness of two years or less indicates good prognosis while one of more than two years indicates poor prognosis. This would be justified by the fact that the percentage of improvement was noticeably lower in patients who had been ill for more than two years. Accordingly, predictions on this basis would have been correct in 64 per cent of the cases. There is a difference of 12 between the percentage of correct predictions based on the duration of illness and that based on the presence of a meaningful Rorschach color interpretation. Thus, of all the single factors taken into consideration the meaningful Rorschach color reaction has the greatest prognostic significance.

Discussion

Rorschach has demonstrated, by purely empirical means, that the more strongly a patient's inkblot interpretations are determined by color, the stronger and more labile is the emotional life of that patient. He found that patients with retracted affectivity, such as stereotyped and markedly deteriorated schizophrenics or depressed patients, usually do not give color interpretations. These findings have been confirmed by all who have put the Rorschach technique to a test. Hence, we can conclude that, all other conditions being equal, the more color determines the subject's inkblot interpretations, the more easily the subject responds to changes in his environment.

The significance of responsiveness to color is not limited to the Rorschach situation. For example, Goldstein[1] demonstrated that individuals work with increased efficiency in green light and with decreased efficiency in red light, green inducing flexor movements, red stimulating extensor movements. The individuals themselves are not aware of any variation in the quality of their work in the different light. Goldstein was further able to establish definite

reaction patterns for the various colors, each pattern involving the total organism. Sensitivity to color, then, has prognostic value because it indicates capacity for emotional reactions involving the total organism.

Rorschach color interpretations furnish an approximate estimate of the ease with which the individual reacts emotionally to environmental influences. They do not, however, in themselves, indicate how deep and adequate the emotional responses are. An analysis of the complete Rorschach record, and particularly of the human movement responses and of the precision of perceived forms, is necessary to gauge the depth and adequacy of the individual's emotional reactions. Our data show that patients who give both color and human movement responses have the greatest chance of benefitting from insulin therapy. In psychological terms this would mean that the easier, deeper, and more adequate are the individual's emotional reactions, the greater, generally, is the chance for his improvement. Now, a schizophrenic who is sensitive to environmental influences and capable of rather deep emotional reactions would be considered to be less deteriorated than one who has lost this capacity. This would point to the conclusion that insulin treatment benefits those schizophrenics who have deviated less from the norm, a conclusion which repeatedly[3, 4] forces itself upon the Rorschach investigator.

Practical Implications

The conclusions of this investigation may be of practical aid in hospitals where, for various reasons, it is impossible to give insulin treatment to every schizophrenic. For, if some patients have to be excluded from treatment, our findings may help in providing a basis for selecting those patients for insulin therapy who have a chance to improve as the result of it. The series of Rorschach inkblots may be used as a simple experimental device for the prediction of outcome of insulin treatment in schizophrenia. The procedure would be to show the 10 Rorschach inkblots to the schizophrenic, one at a time, requesting him to say what they might represent. The purpose of this procedure would be to determine whether the patient is capable of interpreting color meaningfully. Only those patients who by their interpretations show that color

has meaning for them would be subjected to insulin treatment. Thus, the percentage of improvements following insulin therapy would be increased. It is necessary to show the complete series of Rorschach inkblots since this has been the procedure followed in obtaining our data; it is probable that a change in procedure would affect the results. Furthermore, the contrast between the grayish cards and the brightly colored ones is probably conducive to color reactions.

The use of the Rorschach method as a prognostic device would not be applicable in the case of completely color blind patients. If a patient gives no color interpretations, one should determine at the close of the examination whether or not the patient is color blind by asking him to name the colors of the inkblots, or in cases of doubt, by administering the Ishihara Test for Color Blindness.

On the basis of our results, it may be concluded that if only those schizophrenics are treated with insulin who give meaningful color interpretations, then:

(a) The percentage of improved cases will be raised to 81.

(b) All patients who potentially can recover or be greatly improved will be included in the group to be treated.

(c) A certain percentage of patients who would improve moderately or slightly, but who in the main would fail to maintain their improvement, will be eliminated.

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THERAPEUTIC CONSIDERATIONS IN PSYCHOSES OF OLD AGE*

BY GEORGE F. ETLING, M. D.

It is not surprising that the aged as a class are making increasing demands on the medical profession. The continued advances of medical science in the field of acute infectious disease have spared the lives of many young and middle-aged persons who formerly died of epidemic disease. The contributions of research workers in medicine, chemistry and pharmacology have made possible the utilization of vitamins, hormones and important drugs in combating disease processes. As a result, the average individual life expectancy has been increased. The chronic illnesses usually associated with old age now constitute a greater challenge to the general practitioner as well as to the specialist. Malzberg and Elkin[1] in their statistical studies agree that there has been a definite increase in the number of patients suffering from the psychoses of old age. Meyerson[1] states that "no matter how far off we put the senium, by whatever new therapeutic agents we bring into use, it is obvious that old age will come sooner or later and that in many instances it will be associated with a mental breakdown." With the increase in the number of first admissions of patients with psychoses due to senile and arteriosclerotic processes to State hospitals, it is reasonable to assume that there is a corresponding increase in patients receiving treatment at home by the general practitioner, the internist and the psychiatrist.

The early manifestations of mental changes attributable to cerebral arteriosclerosis are headaches, general nervousness, dizziness, fainting spells, buzzing in the ears, personality changes, and an increasing emotional lability. Henderson and Gillespie[2] point out that a very common mode of onset is an apoplectic seizure of major or minor character and that mental symptoms often date from such an episode. Careful examination of the sensorium will elicit definite memory defects which may vary from time to time in their intensity. Cases of this kind may be treated at home under the direction of a psychiatrist. Patients showing more advanced signs of mental impairment, such as increasing irritability, impulsive behavior, delusions of a paranoid nature, apprehension and depres-

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sion, nocturnal excitement, confused, delirious or apoplectic states, will eventually require hospitalization. In early cases where the degree of mental deficit is slight, and there has been no transient disturbance of consciousness or convulsive seizures, Diethelm[3] feels that the patient may continue to work, but that the working hours should be shorter than usual and interspersed with rest periods and well planned recreation. Occupations in which the patient may endanger himself or others must be prohibited.

A complete physical examination should be made before the general psychotherapeutic regime is established. Foci of infection should be eliminated and cardiorenal disease, hypertension and other coexisting disease processes should be treated in a manner which will not cause the patient any undue concern. The patient should be encouraged to keep up his personal appearance and to continue with his regular habits. Where there has been a noticeable letdown in recreational activities, these should be stimulated and an effort made to keep the patient's interest at a normal level. The diet should be well-balanced, adjusted to the patient's needs, and contain a sufficient amount of essential vitamins. Undernourished patients require extra nourishment and stimulating tonics. Overeating should be avoided and prohibited where hypertension exists. Sufficient fluid intake, exercise and abdominal massage aid greatly in stimulating regular bowel elimination. Where constipation is a factor, laxatives or cathartics should be used as necessary. In nocturnal restlessness and insomnia, warm drinks or sedatives such as phenobarbital grs. 1½, sodium bromide grs. 5 or 10, or barbital derivatives such as alurate are indicated. Alcohol should be avoided, as convulsions upon an arteriosclerotic basis are frequently precipitated by alcohol, even when taken in small amounts. Psychotherapy in the form of suggestion and persuasion should be tried in accordance with the intelligence and personality of the patient. In many cases, the unconscious fear of growing old and the awareness of sensorial defects tend to aggravate the patient's symptoms. A sympathetic explanation of physiological changes and their relations to the patient's symptoms and reactions is sometimes very helpful.

Although the differentiation between the arteriosclerotic and the senile is at times difficult, the arteriosclerotic may be characterized

by sudden onset, episodic disturbances and remission of symptoms, while the case of the senile is progressive and there is usually a prodromal period which may be of several months duration. The senile complains of malaise and weakness, eats and sleeps poorly, and shows a narrowing of interests as well as a tendency to be suspicious.

The care and treatment at home of patients showing a psychosis due to senility is essentially the same as that previously described for the arteriosclerotic psychosis. Careful supervision at all times is necessary. The patient should be accompanied on walks to prevent him from being injured or losing his way. Those showing increased sexual urge should be prevented from sexual offenses, as this transitory increase in sexual drive may lead to exhibitionism, indecent liberties with children, involvement with prostitutes, and disgraceful marriages. Those patients who are depressed and agitated, paranoid, or who show delirious reactions, require hospitalization.

Treatment in State hospitals of patients showing mental symptoms due to cerebral arteriosclerosis or senility has become more of a problem because of the medical, surgical and nursing care which they require. The mental picture remains unchanged. The majority are confused, restless, agitated and depressed. With the exception of occasional cases of early cerebral arteriosclerosis, the sensorium is markedly impaired and some seniles show transient delirium. Delusions of a paranoid, nihilistic or somatic nature can be elicited in a number of cases.

A well-planned hospital routine should include habit training, a suitable diet, appropriate clothing, exercise, occupational therapy, recreation, psychotherapy and treatment of accompanying disease processes.

Many patients show definite signs of habit deterioration. An attempt should be made to correct or at least improve faulty habits through training. Special attention must be paid to neatness in personal appearance, regular washing and bathing, care of teeth and hair, and regular elimination. Constant supervision is required in many instances, but with training the less deteriorated patients are able to take care of themselves.

The diet should be adjusted to the patients' needs. Those who have good teeth or satisfactory dentures require no modification of diet. The food should be readily digestible, contain the necessary vitamins, and include vegetables and fruit to stimulate good bowel function. Fried foods and condiments must be prohibited. The writer has found that mixtures containing fried onions, such as Spanish rice, are not well tolerated by bed patients and have a tendency to produce gastrointestinal disturbances with nausea, vomiting and diarrhea. Some require extra nourishment in the form of milk or eggnogs between meals. Those with a tendency toward obesity must be cautioned against overeating. Tonic medication to stimulate jaded appetites is frequently indicated. Tubefeeding should be started early in depressed or agitated patients with whom sympathetic urging and spoonfeeding has failed. The diabetic, nephritic and cardiac require special diets.

Circulatory disturbances in peripheral vessels produce temperature changes in the skin, and many of the old patients complain of feeling chilly or cold, even in warm weather. They should be warmly dressed and sufficient blankets should be provided to keep them warm at night.

To maintain muscle tonus, exercise of some kind should be prescribed. Light ward work, such as bed making, dusting and sweeping should be assigned to those patients whose physical condition permits. Except in inclement weather, patients should be taken for frequent walks, daily if possible.

Occupational therapy is a recognized aid in stimulating interest and retards the rate of mental deterioration to some extent. The work assigned at first must necessarily be very simple, such as pulling burlap apart. Gradually, when attention and interest are keener, patients may be started on other projects, such as weaving and rug making or, in the case of female patients, crocheting and simple needlework. In early cases, where sufficient mental and physical improvement is noted, vocational or industrial therapy may be indicated, according to the patient's aptitudes.

Recreation should be encouraged. The patient should be closely questioned as to former hobbies and these reactivated when possible. The writer believes that recreational therapy plays an important role not only in securing a good hospital adjustment but in

bringing about an amelioration of symptoms in many cases. Suitable reading matter and games should be provided. The radio offers much enjoyment and mental stimulation. Programs should be carefully selected. From the writer's observation, male patients prefer sport programs, humorous skits, news broadcasts and popular music. Female patients enjoy concert music and talks relating to household problems. Some patients enjoy the talkies and dancing, while others take pleasure in playing the piano.

Psychotherapy is of little value except in early cases of cerebral arteriosclerosis. Persuasion, suggestion and a sympathetic understanding of the patient's problems offer the best approach. Where ideas of infidelity with a jealousy reaction occur on the basis of increased sex urge or a decrease in potency, psychotherapy may be helpful.

The extremely restless, agitated or depressed patient requires special treatment. He must be watched because of the danger of self-injury. Where there are no physical contraindications, these cases benefit from continuous tub treatment and the judicious use of sedatives. The writer has obtained good results with sodium alurate grs. 3½ given twice daily at 9 a. m. and 6 p. m. during the acute excitement, after which phenobarbital grs. 1½ once or twice daily, as necessary. Hyoscine hydrobromide gr. 1/100 or morphine sulphate gr. 1/6 or 1/4 may be necessary in extreme instances.

The general routine treatment described above is essential, but even more important is the problem of caring for the increasing number of enfeebled individuals who must remain in bed and receive constant medical and nursing care.

In an attempt to show more clearly the accompanying chronic disease processes which require medical or surgical treatment, the writer has reviewed the cases of 200 patients consecutively admitted (100 male and 100 female), all of whom have been diagnosed "senile psychosis" or "psychosis with cerebral arteriosclerosis." Each was the patient's first admission to a hospital for mental treatment. The male patients were admitted between July 1, 1938 and January 5, 1939; the female patients between July 1, 1938 and March 16, 1939. Seventy-two male and 69 female patients were diagnosed "psychosis with cerebral arteriosclerosis" and 28 male

and 31 female patients as cases of senile psychosis. The average age of the men was 68.8; of the women 69.3. The youngest male and female patients were 49 and 50, respectively; the oldest male 89, the oldest female 90.

The female group constituted 20.8 per cent of the total female admissions and the male group 18.1 per cent of the total male admissions during the periods mentioned above.* Of the female patients, 37 (25 arteriosclerotics and 12 seniles) have died; 6 (5 arteriosclerotics and 1 senile) have been paroled or discharged and 57 (39 arteriosclerotics and 18 seniles) remain in the hospital; the average age at death was 69.6, at parole or discharge 62.1 and of those remaining in the hospital 69.6. Of the male patients, 39 (23 arteriosclerotics and 16 seniles) have died; 10, all arteriosclerotics, have been paroled or discharged and 51 (39 arteriosclerotics and 12 seniles) remain in the hospital; the average age at death was 69.8, at parole or discharge 61.1; and of the patients remaining in the hospital 69.7. Of those remaining in the hospital, 20 females and 22 males are bed patients and require special medical and nursing care.

The writer is aware that the findings in such a brief survey may not be entirely consistent with those studied over a period of a year or more but believes that it does reveal to a large degree the physical diseases of old age usually treated in an infirmary service. Parenthetically, the writer might urge that physicians in charge of such services would derive much benefit from attendance upon clinics or courses in internal medicine. For detailed treatment regarding the various diseases indicated in this review, reference to standard texts is suggested. However, the following points regarding general bed care and medical treatment may be mentioned.

The bed patient should be bathed daily and more frequently where bladder and rectal incontinence is present. The patient's position must be changed frequently to avoid pressure areas and decubitus. The use of astringents in back care is important. Alcohol sponges and rubs, followed by dusting with some type of medicated powder, should be a routine procedure after bed baths. The writer has had very good results with alum and tannic acid as astringents. Either may be combined with alcohol. Tincture of

*The lower percentage of male patients is undoubtedly due to the fact that there were no vacancies for bed patients from November 15, 1938, to January 5, 1939.

benzoin is also beneficial. Precaution must be taken to prevent feeble patients from falling, and the use of the safety strap is indicated for confused feeble patients who attempt to get out of bed frequently. Simple sedatives allay restlessness. The daily use of mineral oil and abdominal massage promotes regular elimination in many cases. Laxatives, cathartics or enemas must often be resorted to in very old patients.

TABLE 1. PHYSICAL FINDINGS IN 100 CONSECUTIVE MALE ADMISSIONS DIAGNOSED PSYCHOSIS WITH CEREBRAL ARTERIOSCLEROSIS OR SENILE PSYCHOSIS

Cerebral arteriosclerosis	72	
Senile psychosis	28	
Average age	68.8	years
Youngest	49	years
Oldest	89	years
Arteriosclerotic heart disease		41
Asthma		2
Arthritis (chronic osteoarthritis)		4
Benign prostatic hypertrophy		12
Bronchiectasis		1
Cataract		9
Cystitis		11
Cerebral apoplectic residuals		14
Chronic bronchitis		4
Carcinoma of rectum		1
Cancer of bladder		1
Cancer of pylorus		1
Cancer of hard palate		1
Deafness		4
Diabetes		5
Fractures (on admission)		2
Glaucoma		1
Hernia		23
Hypertension		33
Hydrocele		4
Hemorrhoids		5
Kidney disease		18
Luetic heart disease		1
Portal cirrhosis		1
Pulmonary fibrosis (silicosis)		1
Rheumatic heart disease		1
Systemic lues		7
Tuberculosis		3
Ulceration of penis with gangrene		1
Varicose veins		7
Varicose ulcers		4

TABLE 2. PHYSICAL FINDINGS IN 100 CONSECUTIVE FEMALE ADMISSIONS DIAGNOSED PSYCHOSIS WITH CEREBRAL ARTERIOSCLEROSIS OR SENILE PSYCHOSIS

Cerebral arteriosclerosis	69	
Senile psychosis	31	
Average age	69.3	years
Youngest	50	years
Oldest	90	years
Arteriosclerotic heart disease		30
Acute cholecystitis		1
Aneurism of the aorta		1
Bronchial asthma		1
Chronic kidney disease		16
Chronic bronchitis		1
Cystitis		5
Cataract		5
Cerebral apoplectic residuals		8
Cystocele		3
Deafness		2
Diabetes		3
Epithelioma of nose		1
Glaucoma		1
Gangrene of foot (arteriosclerotic)		1
Gangrene of toes		1
Hypertension		41
Hemorrhoids		5
Hernia		1
Osteoarthritis		7
Psoriasis		1
Prolapsed uterus		1
Rectocele		2
Systemic lues		3
Tumor of breast, benign		1
Varicose veins		30
Varicose ulcers		3

In hypertension, complete rest, quantitative restriction of diet and the use of vasodilators such as sodium nitrate, nitroglycerine, amyl nitrate and theobromine preparations are indicated. In the more severe cases of arteriosclerotic heart disease, pain over the precordium, left side of chest and shoulder and upper epigastrium is frequently present. The use of vasodilators offers some relief, but sedatives such as codeine or morphine sulphate are frequently necessary. Digitalis is indicated in auricular fibrillation and congestive heart failure. Lyons[4] advocates the early use of diuretics in cardiac failure with edema in elderly patients showing damaged

heart muscle. The mercurial diuretics such as salyrgan in combination with ammonium chloride seem to produce the best results. Theobromine and Theophyeline should be tried at intervals in chronic edema.

In prostatic hypertrophy, measures must be taken to prevent renal damage due to bladder retention. Pollak[5] has reported good results with intramuscular injections of testosterone propionate in cases of early prostatic hypertrophy without appreciable residual urine. With a gradual increase in residual urine, cystitis and ascending urinary infection frequently occur and catheterization becomes necessary. Urinary antiseptics such as urotropin, mandelic acid and neoprontosil by mouth, and bladder irrigations with boric acid, offer some relief. Eventually operative intervention becomes necessary.

The treatment of varicose veins should be palliative and may be accomplished by elastic support of the lower extremity. Stockings of elastic yarn or mercerized silk and rubber bandages which extend to the groin provide the greatest support and relief. Acutely inflamed varicose ulcers are best treated by rest in bed, elevation of the affected limb and application of hot boric acid dressings.

With the exception of a few chronic complainers, the majority of the old patients not only cooperate but seem genuinely grateful for their medical treatment. After continued treatment, a small percentage of these patients show sufficient improvement to warrant parole consideration. Before a patient is paroled, it is important to look into the factors which may have contributed to, or precipitated, the mental symptoms for which he was hospitalized. This aids in correcting, wherever possible, environmental situations which might lead to a recrudescence of mental symptoms. The home situation should be carefully investigated with reference to the neighborhood, size and cleanliness of the home, family income and congenial atmosphere. It may be necessary to parole the patient to relatives other than the immediate family in cases where friction existed between the patient and his family prior to hospitalization.

Another requisite is the continuance of medical treatment in cases of hypertension, cardiac disease, nephritis, diabetes and other

chronic disorders. Arrangements should be made to have the patient receive treatment from his family physician or at clinics. Relatives to whom patients are to be paroled should be instructed regarding the type of diet, amount of rest and supervision required. The importance of regular attendance at parole clinic must be stressed. Alcohol should be prohibited. Economic responsibility for the patient should be assumed by all members of the family wherever possible. An attempt should be made to provide for occupational adjustment in the case of the ablebodied. It is preferable that the patient receive some remuneration and that the employment be of the type where rest periods are permitted. The importance of social and recreational therapy cannot be too strongly emphasized.

In those cases where the patient has no relatives or where parole to the relatives seems inadvisable, the possibility of family care should be considered. The placement in family care of aged patients who have made good hospital adjustments has been successful in many instances. At the present time, there are 48 cases of cerebral arteriosclerosis and 22 of senile psychosis in family care from 10 New York State hospitals outside the metropolitan area. In answer to inquiries regarding these patients, the concensus of opinion indicates that they adjust well in foster homes. All but 11 have shown definite improvement. Five patients from the Utica State Hospital have adjusted to such an extent that old age assistance has been secured for them and they have been able to continue in the community. It would seem that family care is of definite therapeutic value in the psychoses of old age.

Summary

The writer has endeavored to present a brief outline of the treatment of the psychoses of old age at home, in the State hospital, and during parole. Family care has been briefly mentioned. The physical illnesses to which this type of patient is most susceptible have been reviewed and the incidence of these disorders discussed. When one considers not only the first admissions surveyed in this paper, but also the many patients not originally classified in this group who, after years of hospitalization, show physical and mental changes due to senescence and require medical and nursing care,

the infirmary service assumes a very important place in the State hospital setup.

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IDEAS OF NEGLECT AND HOARDING IN THE SENILE PSYCHOSES

BY MORRIS D. RIEMER, M. D.

An idea commonly expressed by the senile psychotic is that he is being neglected. This neglect most often has to do with food. Patients will say, "I'm being starved—I've had absolutely nothing to eat," despite the fact that shortly prior to this they may have ingested a heavy meal. As a result, they develop voracious appetites, and continue to complain.

This idea of deprivation can take other forms; of greatest frequency seems to be the belief that one's jewelry, money, furniture or belongings are being stolen, or members of the family being kidnaped. In reaction to these ideas there is a display of rage, anger and protest, occasionally accompanied by assaultive behavior, to ward off the depriving agents.

As a counter reaction to ideas of "having everything taken away," these patients develop the protective tendency to hoard objects, to which they attach a fixed value. One patient entered the hospital with a trunkload of 73 hats, none of which she had ever worn. Henderson and Gillespie[1] speak of these indivduals as having their "pockets filled with articles, often of little or no value," and with "an unnecessary volume of clothes." Some will hoard food. Their homes become unclean and disordered because of this behavior characteristic. On the hospital ward they secrete such articles as bread, soap and toilet paper.

The hoarding tendency and the particular trend described seem to be far more characteristic of the senile psychoses than of any other mental disturbance. These manifestations are mentioned in the textbooks, but are not given a relative evaluation nor a possible basis, except for the usual consideration "as due to senile organic brain pathology."

It is fruitless, for our purposes, to describe the gross and microscopic brain changes in this disease. The question to be determined here is whether, as is generally agreed, ideas of neglect and hoarding tendencies are fully attributable to the already well-known brain changes. To quote again from Henderson and Gillespie,[1] a statement such as the following is found rather frequently: "The senile individual forgets where he has placed his clothes, and, not

fully recognizing his own memory defect, blames some one for stealing them." This quotation involves a typical idea of neglect or of having something taken away. It is more or less attributed to the patient's memory defect. Similarly, the explanation offered for the senile's failure to remember that he has just eaten and his demand for more food, is his defective memory for recent events.

Of course, in the face of the obvious breaking up of association pathways, it seems most logical to look upon it in this manner. But one is led to ask, "If the patient can forget so readily, why does he not forget in the positive, instead of in the negative direction, and say, 'Oh yes, I've just eaten—I don't want any more food'." This, however, does not occur. It might be agreed that the individual forgets that he has just eaten, but again, why should he, in particular, choose to emphasize this phase of his forgetting, when so many other all-embracing activities are still present?

In fact, it appears that the matter of sensorial impairment or forgetting has been given undue prominence and that possibly, it has not at all the function ascribed to it in the development of these ideas. Let us take, for example, a similar manifestion in the child. All of us have probably heard of children who naggingly ask their parents, "Do you love me?" Although reassured that he is loved, the child may in sixty or fewer seconds repeat the same question and do so endlessly, very much like the senile patient asking for food. Certainly in the child there is no memory impairment. Has he forgotten that he just asked a moment ago for some sort of reassurance?

If the child has not forgotten, why does he need this repeated assurance? When the youngster is reminded that he has made the same request a few minutes before, he admits it, with some degree of embarrassment, showing a fully intact sensorial apparatus. This admission, however, cannot be obtained from the senile, who shows almost the same phenomenon with a defective sensorial apparatus. Perhaps then, the senile is involved in much the same need as is the child who is asking to be loved, and his insistent demands are likewise requests for reassurance. For is it not recognized that the senile is childish? Might he not then be voicing the needs of a child?

Let us for a moment attack the problem from another point of view, and look upon the matter of food in relation to the psychic apparatus. Beyond satisfying hunger, food has an additional value —that of supplying internal psychic needs. An example of this is the reward of sweets given to a child or animal in recognition of good behavior: the blissful expression and accompanying rise in self-esteem clearly demonstrate that the food under these circumstances has a purely psychic value, serving to make the individual feel reassured and loved. Another example, involving the same phenomenon, is the "nervous" person, who is constantly chewing at something. A whole series of instances of this mechanism might be given, but the above is sufficient to indicate that being fed is (psychically) equivalent to being loved.

Perhaps some of the questions we put to ourselves can now be answered. The insecure child, in clamoring for attention, is attempting to relieve his feeling of insecurity through the acquisition of parental love. The senile patient, therefore, seems to be asking for the same thing. On the other hand, he puts it in the form of a complaint and says, "I'm not getting any food," which means "I'm not getting any love." An inevitable conclusion presents itself—inwardly the senile must feel very insecure, not unlike the neurotic child; indeed, when one considers that the senile is really deprived in part of his most valuable organ, his brain, it is virtually unnecessary to say that he feels insecure.

That he feels more secure while gulping his food or gazing at his collection of objects, is evidenced by a fairly pleasant mood, somewhat buoyant demeanor and increased self-evaluation apparent at these times. How necessary it is for him to seek to maintain this state of self-reassurance is shown by the constant iteration of the same complaints and the accompanying irritability when these are not gratified.

A word might be said to summarize the many items in life that are predominantly evaluated as of a security-giving character. We have indicated that food is the outstanding one. The other objects that the senile may choose in his trends will naturally depend upon his experiences of the past, and the relative reassuring significance that they have had for him throughout life. To many, relatives or

friends come foremost: they will emphasize in their delusional trends that various persons are leaving them or being taken away. To others, valuables, money, jewels or property take first choice as symbols of security. The details of the ideation of the senile psychotic will embody his experiential values, all of which will be set in the main theme of "being deprived of love." In origin this love is that which he received from his parents and for which he again clamors.

Conclusions

The senile who has partly lost the use of his brain—the seat of experiential, intellectual and sensorial maturity—no longer can utilize these adult functions and must seize upon whatever other self-sustaining forces are resident in his psychic economy. The earliest of these forces, narcissism, serves most fundamental needs. This is true even in the primal matter of falling asleep. Again, individuals suffering various types of organic affection exhibit increased narcissism, that is, they become complaining, irritable, more or less helpless, and dependent. The senile, having suffered irreparable organic damage, manifests inordinate narcissism or childishness, which takes the form of ideas of neglect and of hoarding tendencies.

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THE PSYCHIATRIC EXAMINATION OF THE CRIMINOTIC INDIVIDUAL

BY ARTHUR N. FOXE, M. D.

As with other individuals, it sometimes is necessary to examine the criminotic individual to determine whether he is "sane" or "insane." In such cases the psychiatrist may use the conventional methods of examination described by Cheney.[1] However, where there is no question of a well-defined psychosis there are certain striking differences of which one must be aware. A personal experience may indicate what is meant. The writer recalls that, having previously examined patients for mental disorder, he continued much the same methods on entering the prison service. These examinations at first seemed adequate, but with further experience their deficiencies became apparent. At that time, a "sane" person, even though criminotic, seemed well in every other way. Greater insight has come with time. Today, the character and personality stand out as of prime importance in the examination.

In examining the criminotic individual one does not look so much for delusions, hallucinations, suicidal tendencies, grandiose ideas, disorientation, etc. One examines for lived-out tendencies which are in a sense the reverse of, or at times the equivalent of, identical contents in the psychotic. Thus, the burglar who breaks into a loft building and steals a large amount of merchandise is beset by a grandiose idea that the merchandise really is his in the first place; more so if he is under the influence of some drug or alcohol. Another difference is that in court and prison the psychiatric case load and shift are usually much greater than in a hospital for mental diseases. The reports on criminals, therefore, are rarely as lengthy as those prepared for the mentally ill. Furthermore, the court report is used largely by nonmedical officials and the language for the most part is less technical. Finally, the psychiatric report on a criminotic individual will no more contain all the data given below, than the psychiatric report on a psychotic or neurotic patient will contain all the data in a work on the examination of the psychotic individual.

In examining the criminotic, it is essential that the total life of the individual be considered. Empirical methods used by officials in carefully examining the criminal record offer the clue to proper

approach. Each crime stands out as a landmark in the man's life —a landmark with its own special history, emotions and conflicts. It is also necessary to estimate correctly the influence of the immediate situation on the temporary coloring of the subject's character. When this is not done, phantastic errors may be made. It is readily conceivable that the individual planning and committing a crime, being apprehended and interrogated by the police, awaiting trial and sentence, appearing in prison for the first and succeeding times, expecting to serve a long or short sentence, adjusting to prison life, awaiting his meeting with the parole board, being set back or entering society again, will on each occasion present a different facet of his personality with a different resultant reaction. The psychiatrist employed through the intervention of the district attorney meets a problem different from that of the psychiatrist employed by defending counsel. Indeed, each individual has many aspects to his personality, so that to judge an individual by one small phase of it is obviously most inadequate. Nevertheless one often finds psychiatric reports on the same individual which flatly contradict each other, drawn up as they were by different psychiatrists at various times of stress or calm. These contradictions are due to the failure to disengage from the general picture what is not inherent in the individual but merely part of the immediate situation.

It is important, above all, to consider the purpose for which the psychiatric examination is conducted. The court may wish to learn something of the subject's character, personality and prospects for adjustment before trial or sentence. After the man comes to prison, he is again examined for classification. Here one anticipates the problem of rehabilitation and the problem of fulfilling and maintaining administrative harmony, efficiency, morale, and need. During incarceration similar problems arise. Previous to parole, another estimate is made to determine the advisability of parole and the possibilities and methods of best securing successful parole for each individual.

As with the examination for sanity, the utmost tact is required in examining the criminotic individual. Moral bias, be it a hypercritical or a hypersympathetic attitude, is quickly sensed and has its response in the emotional attitude of the subject. (Similarly,

in the subsequent psychiatric report it is best to use terms having as little moral connotation as possible.) Referring to the subject's record in one's hand or on a desk is a poor policy because it gives the interview an "official" tang which puts the subject still more on the defensive. It is wise to carry on the examination with a proper balance of formality and informality. One must begin with an air conducive to mutual trust and confidence. If the subject asks to smoke, one does not object. Often when he does ask to smoke, he takes out or rolls his cigarette but never lights it. His request may be a test, in a sense, to see whether he is dealing with a hard taskmaster or one before whom he may relax and talk more freely.

The examination begins with the subject's first appearance within the examiner's field of vision. Immediately one begins to note size, bearing, posture and general appearance. In certain aggressive and possessive types, one is somewhat taken by storm. The subject walks through all examining rooms, never knocks, never hesitates and, before one knows it, is beside the examining desk prepared to take his seat. Others go to the opposite extreme. All such observations are important and may be jotted down as the examination progresses, later to be incorporated in the report.

Some psychiatric reports begin with a study of the immediate crime. However, it is difficult to gain rapport with the subject after beginning the examination in this way, for he frequently is most sensitive about the immediate crime. As a rule, it is the most recent emotional problem in his mind. Further, even to his last day in prison, he may for legal and other reasons remain most reserved on just this problem. The writer's experience, more or less conformant with that of other psychiatrists dealing with the criminotic individual, indicates the following as probably the best order of carrying on the interview and preparing the psychiatric report. It will vary in content and stress with the purpose of the examination and the immediate situation. Within the scope of a single paper, it is impossible to give the import behind much of these data secured from the subject.

OUTLINE FOR PSYCHIATRIC INTERVIEW AND REPORT OF THE CRIMINAL

1—*Social background.* Name (care in spelling due to legal factors); number, if in prison; previous numbers; aliases; age. Birthplace, country, state, city, or village. If born in a large city, which section of that city (thus in New York City possibly Hell's Kitchen, Little Italy, Lower East Side, or other sections—this immediately gives a general clue to environment). Early childhood spent where. If foreign born, which country; method of entering country (legal or illegal); how long in the United States and state or city of immediate residence; citizenship; first papers; if born out of the state, how long has he been in the state; names of states or countries in which he has lived; reasons for shift of residence (familial or individual, economic; adventure, ambition, nomadism, evasion of police); alone or accompanied in change of residence. Parents alive or dead; whereabouts; divorced or separated; adjustment of parents to each other. A simple question suffices, such as, "How did your parents get along with each other?" "Was there much quarreling?" Tenor of home (happy, gloomy, etc.); home crowded; if one or both parents have died, subject's age when this occurred; who cared for him thereafter (remaining parent, orphanage, other relative), or did he shift for himself or run away from home; if parents are separated or divorced, with which one did he live; were there step-parents, at what age acquired. Number of siblings, half-brothers, half-sisters, step-brothers and step-sisters older and younger than the subject. Occupation of the father and possibly of the brothers; economic status of family. History of mental disease, criminosis, epilepsy, alcoholism, and drug addiction in the family. Attitude and attachment to various members of family; severity or leniency of early training; degree of contact with relatives.

2—*Education.* Grade, term, or college year reached and age at time. Was education received while confined in an institution. Attitude toward schooling; reasons for leaving school (did not like school, wanted to shift for self or go to work, economic factors, no school available, ejected or sent to institution for truancy or juvenile delinquency); is there further interest in schooling or learning of any sort. Although not inquired into, one may later insert

here the mental age, intelligence quotient and educational age of the subject.

3—*Occupation.* Various positions held; length of time. A brief question may be asked as to the longest time one position was held. (Very often steadiness appears in only the first position held after leaving school. A response that he has done "most anything" usually indicates little steadiness.) Did he work for relatives or strangers. Did he have his own business. Trade and vocational interests and ambitions should be inquired into.

4—*General information and interests.* (a) Religion: interest and attitude; attendance. (b) Travel: by land or sea; extent and duration; business, pleasure, nomadism, working his way, hitchhiking. Was travel enforced because pursued by the authorities (after jumping bail or deserting family, following crime, A. W. O. L., escape). (c) Reading: light literature, nonfiction; newspapers, magazines or "hard cover books;" drama, fiction, sport, true stories, philosophy, science, biography, detective stories, classics, psychology, "anything I can get." (d) Music and other cultural interests: instrument played, professional or amateur, details of other interests. (e) Sport: professional, amateur, "just for sport" (boxing especially). (f) General view of interests: broad or narrow, deep or shallow.

5—*Service.* Army, Navy, National Guard, Civilian Conservation Corps, Merchant Marine; time and age of service; rank; honorable, dishonorable, medical, or undesirable discharge; overseas service.

6—*Civil status and sex life.* Single or married, divorced, separated, remarried, common law marriage. Past and present attitude toward wife and that of wife toward him; do they correspond with each other frequently; tenor of marital life (happy, unhappy, etc.); marital difficulties—cause, how long lived with wife. Children: number, ages. Venereal disease. (Occasionally a subject may be sensitive when questioned about this immediately after being asked about his family. It is wise to postpone this question until later in the interview after having asked about his physical condition. If the subject is single this would not apply.) If single, what sexual relations with women. (Matters of such delicacy as

incest should never be touched upon unless the subject is held on such a charge: this is foolhardy; it may provoke physical violence, and certainly will destroy much of the value of the examination. It is well to bear this in mind with any question about which the subject may be sensitive. It is wise to postpone it until later, when the whole examination will not be jeopardized. When not pressed, the subject may feel so relieved as to offer the data voluntarily later. Even questions on perversions, in a first interview where there is no evidence of such, are usually bad tact. However, one may ask general questions on sex.)

7—*Habits.* (a) Alcoholism: age begun; frequency—periodic (time interval), weekend, steady, occasional social user, with meals only; number of times intoxicated; effects—elation, sleepiness, unawareness of what he is doing, quarrelsome, impulses released, depression overcome, becomes more sociable and buoyant. Setting: alone, in crowds, in bars, at home, at parties only, among men only or in mixed company. Type of beverage: beer, wine, or hard liquor. Possible relation to crimes. Did he ever get into difficulties while drinking. (b) Drug addiction: age begun; frequency; effects; setting; type—cocaine, morphine, opium, marijuana (muggles, reefers). As a rule little information will be elicited concerning drug habits. The stigma on drug users is so great that it is highly disadvantageous to them to admit addiction, even when their records give clear evidence thereof. (c) Smoking: considering the frequency of this habit today, it is usually more striking to find a nonuser of tobacco. Nonuse may or may not indicate some special inhibition. (d) Gambling: age begun; frequency; type—dice, cards, horses, stocks and bonds; amateur, professional, for social purposes only (the professional gambler is actually not a gambler); degree—greatest amount ever won or lost at one time, did he ever lose his salary gaming; possible relation to crimes.

8—*Physical history.* (a) Venereal disease—gonorrhea, syphilis. (In questioning for gonorrhea one may have to ask if there ever was "clap," "strain," "running range." These are slang equivalents often better known than the word gonorrhea. A knowledge of slang is invaluable in getting data that otherwise would be missed. In questioning for syphilis, one often finds a history of "shots in the arm" or "blood treatments" which may be verified

as having been given for treatment of syphilis, yet the man may deny he has had syphilis. Perhaps he was told only that he had a "blood disease." (b) Epilepsy (fits or convulsions): serious injuries; knocked unconscious in fights or accidents (numerous accidents or injuries may indicate some self-destructive trend); wounded in civil life; if overseas, wounded in service—gassed or shell-shocked; relation of symptoms to present state and possible after-effects on character. (c) Serious illnesses; age at time of illness; relation of symptoms to present time, possible after-effects on character. (d) Operations. (e) Obvious endocrine disturbances; development of secondary sexual characteristics. (f) Neurotic symptoms; nightmares. (g) History of persisting congenital defects; constitutional type or deviation. (h) At this time one may question the subject about physical peculiarities noticed: peculiar posture, lameness, amputations, facial and other scars, tatoos, squint, speech defects, hare lip, cough, complexion, tics, tremors, etc. (i) In the very old, one is aware of a possible need for custodial care. (j) Present condition is ascertained by such questions as "How do you feel now?" "Are you capable of doing heavy labor?" "If not, why not?" "Are you being treated now?"

9—*Past criminal history.* It is wise to ask first, "Were you ever arrested before your present arrest or sentence?" If never, the subject is only too glad to say "no." If he was, he usually admits it. If the first question concerns the number of times arrested, the subject may become justly indignant if he was never arrested before, to the detriment of the examination. After determining that there were other arrests, and asking "how many times?" he may answer, "I was convicted twice." This is an evasion: return with "I meant how many arrests, not only convictions." If the first arrest is given as occurring in the late teens, ask if he was ever arrested for truancy or juvenile delinquency. This often brings the naive response, "Oh you mean juvenile also?" Of course, the examination may be anticipated by looking up the record or having it on one's desk, but this tends to make the subject more wary. Furthermore, the interviewer is likely to become too concerned with detailed correspondence between the record and the subject's statement, so losing all the play of character that he may exhibit. Marked discrepancies are rarely found on looking up

the record at the conclusion of the examination. Such discrepancies occur when the omitted crimes receive unusually strong social disapproval, notably the sex crimes. With experience, however, one learns to discover these as well. Where the subject says he has twenty, thirty or more arrests one does not go into each crime. One asks the nature of the most frequent type of arrest. If there are 10 arrests for picking pockets and 10 for intoxication, one then asks, "And what else were you arrested for?" Ordinarily the number of arrests is sufficiently small to make it possible to inquire about each, separately and chronologically. It is important to gather the following data about each crime: (a) Age at time; crime, description of crime; night or day; alone or accomplices, number; role in crime; feelings before, during and after crime; proceeds of crime; weapons used; planned or impulsive; how apprehended; plea or trial; if trial and claims unfairly sentenced, ask how long trial took and how long jury was out; motives of crime; how long he was acquainted with accomplices and where he met them; was conviction the result of one or of multiple crimes; sentence received; in what institution was the sentence served. This line of questioning is repeated with each crime. If the subject speaks spontaneously, so much the better. Unfortunately, one more often encounters unusual brevity and less frequently great circumstantiality. (b) In sexual crimes especially, one must delve more thoroughly to get anything at all. Cases of "sodomy" may resolve themselves into conviction for any one of a score of perversions of passive or active type practised upon child or adult.

10—*Present offense.* The last criminal offense is the immediate one. It may be so active in the subject's mind as to bring forth great detail, if he be indignant about it, or no statement at all, if he plans further legal action or even has a faint hope that his sentence may in some way be mitigated or erased. It is not uncommon for a subject to admit guilt in all crimes but the last one. He may deny any or all crimes. One may then ask what he was accused of doing or what they said he did.

In a similar vein are other details about which one usually questions the subject: is he a parole violator; how did he violate parole; punishments for infractions of prison rules; history of escape from an institution, or of participation in a prison riot; are there

any warrants held against him; has he enemies in prison; has he been disturbed by news from home or elsewhere; has he or will he meet the parole board and when; does he feel safe in prison; does he mingle or stay alone; is he (if young) capable of handling himself against assaults of older inmates; does he feel tempted to escape. Many men will readily admit this latter when they feel the urge to, yet would not wish to escape for fear of the consequences.

11—*Personality.* During the examination, one will have been listening and observing carefully, making occasional notes on personal characteristics which eventually will make a short paragraph (generally in lay terms) near the end of the psychiatric report. The range of these characteristics is wide, but in the personality summary we find the gist of all that goes to make up the individual examined. Some psychiatrists prefer this summary to be divided and tabulated but the worker finds it more useful when given as running comment, provided it is not too brief. It cannot be overemphasized that the examination begins with the first sight of the subject. Some of the multitude of things one may observe are as follows:

A. *General appearance and bearing:* (a) Build and appearance: tall, short, medium height; thin, obese, muscular, bony, wiry, stocky, brawny, burly, "chunky," well built, gangling. (b) Sallow, gaunt, florid, pale; looks healthy or ill; well preserved or deteriorated. (c) Neat, untidy, well groomed, effeminate in dress. (d) Carries himself well; appears older or younger than his years; swaggering, roving (if he wanders about office), slow-moving, brisk, brusque, fast-moving, crouching, shifty, self-confident, meek, timid, deferential, restrained, composed, gruff, lackadaisical, bold, forward, bizarre, stiff.

B. *Special behavior and speech:* (a) Stares, gaze wanders, looks at ceiling or floor, avoids meeting examiner's eye, shifts eyes, closes eyes as one looks at him, studies examiner. (b) Outspoken, low voice, high-pitched voice, voluble, terse, rambles, "hems and haws," slurs his speech, nasal speech, drawls, hoarse or rasping voice, talks slowly or rapidly, talks through corner of mouth, talks through clenched teeth, talks through tight lips, monosyllabic answers, accent, slangy speech, circumstantial. (c) Makes self com-

fortable, appears ill-at-ease, leans back, rests elbows on desk, shifts position frequently, fidgets. (d) Coughs, hawks, breathes with difficulty, tenses chest in order to talk. (e) "Ticklish" sense of humor; supercilious, continuous, sheepish or silly smile. (f) Weeps readily; gets up and dramatically portrays the crime or other situations. (g) Lights cigarette without asking, asks to light cigarette and doesn't light it, bites lips, constantly chews, smacks lips. (h) Rubs nose and mouth with hand, rubs hands together, cracks knuckles; picks at hair, eyelashes, nose, mouth, chin, ears or neck; plays with objects on the desk. (i) Taps fingers or feet; shakes foot.

C. *Emotions, mood, reactions:* (a) Alert, suspicious, shrewd, clever, cynical, cool, collected, cautious, stubborn, scornful, sullen, evasive, self-depreciatory. (b) Ingratiating, jovial, happy-go-lucky, "hail-fellow-well-met," good mixer, buoyant, flighty, congenial, optimistic, easy-going, good humored, self-laudatory. (c) Erratic, light-headed, hot-headed, "I don't care" attitude, willful, suggestible, shallow, active, sensitive, superficial, testy, unsettled, changeable, tense. (d) Indifferent, phlegmatic, superior, sure or not sure of self. (e) Youthful, boyish, childish, naive. (f) Even-tempered, frank, serious, firm, aggressive, plausible, calm, quick, dynamic, pleasant. (g) Bitter, sombre, hostile, vindictive, defiant, revengeful, "rough-and-ready." (h) Pedantic, meek, mild, pessimistic, slow, dull, effeminate, anxious, pleading, resourceful.

D. *Typical patterns and defense mechanisms:* Attempts to gain sympathy by saying, "You wouldn't believe me," or, "They all must tell you the same story;" shows a strong tendency to paint picture in his own favor at every turn; shows that he is very irritable or impulsive—when provoked, under the stress of some special situation, under the influence of alcohol, or, only as a member of a group; his story has a ring of plausibility or implausibility; has a tendency to rationalize and say, "I was only kidding around;" was a leader or follower; claims he was unwitting; claims he was "railroaded" or "framed;" laughs as he recounts crimes and other experiences; minimizes his crimes; avoids giving details; depreciates others to prove his own case; seems to be making a special effort to control himself; irrelevant, shifts from one subject

to another; reactions seem exaggerated; changes during examination and their cause (more congenial or less so, etc.); undercurrents, as of depression; feeling of righteousness; refuses to talk of some one thing such as family, crime, or crimes; inconsistent—denies crimes, yet admits he is the black sheep; shifts responsibility; forgetful; fixed in habits.

12—*Technical summary.* In this paragraph (not part of the examination proper), the psychiatrist may have full rein to express himself in descriptive psychiatric terminology, or in the terms of any psychological school to which he adheres. This is valuable for his own interest in his recordings, and is more or less necessary from the legal and scientific angles.

13—*Prognosis.* By this time, if the examination has proceeded satisfactorily, something of a break in the tension of the examination may appear when one asks about the future and what it holds for the subject. He now may feel for the first time that you are on his side and not the inquisitor. In the discussion of his future, one may lead to additional provoking factors in the past that may be incorporated into the personality study (above) in the psychiatric report: his past associates, frequenting of poolrooms, interest in prostitutes, pleasure seeking, etc. This incorporates an important sociological aspect into the study. It is usually helpful to let the subject give as best he can the reasons for the life he led and how he plans, if he does plan, to alter matters in the future. As with all humans, the criminotic tends to overestimate his abilities to control fundamental instincts and their repetitive expression. Thus only a small fraction of the prognosis depends on this last questioning. One also asks about ambitions and future employment. Some of this already will have been ascertained during other parts of the examination. The sum picture is always the best way of arriving at a degree of accuracy in prognosis. Special factors which may be studied at this time are hopes for the future, extent and depth of vision, planning toward the future. These will be balanced against many factors, but especially against the repetitive or long criminal record, its pattern and typical sequence, the persistence of the precipitating factor. Important to consider, also, is the length of stay in prison and whether the subject is more

or less mature in his outlook. Significant too, are whether his allegiances tend toward legitimacy, illegitimacy, or a borderline between the two. He may solve the problem by saying, "I don't know about the future," or, "I don't care," or, that "I will let the future take care of itself." In the psychiatric report proper, the examiner will of course add his own prognosis given as bad, poor, fair or good with any special factors he wishes to stress.

14—*Diagnosis or classification.* One might say that this should come before the prognosis. However, convenience and sequence make it seem properly to come here. Certain formalities of classification and recommendation must be made which constitute a feature of the report in which the subject plays no direct part.

(a) Psychiatric Classification (American Prison Association or other)

(b) Administrative Classification (American Prison Association or other)

(c) Criminological Classification (or type of offender)

15—*Recommendations.* These depend upon the purpose of the report and upon those by whom the examination has been solicited or requested.

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DETERMINING THE PROGNOSIS IN THE INVOLUTIONAL PSYCHOSES

BY JAMES A. BRUSSEL, M. D.

For psychiatrists, especially those in large institutions who come in contact with many visitors, there is nothing more desirable than specificity in diagnosis, prognosis and treatment. Of the questions by anxious relatives, most difficult of reply are "How long do you think she will be ill?" and "Do you believe she will recover sufficiently to leave the hospital?" In the case of the greater number of mental illnesses, the psychiatrist usually finds it most puzzling to construct a definite reply to such questions so that, at the same time, relatives will be satisfied with the answers.

In some syndromes definite prognostic schemata have been worked out to facilitate the problem of anticipating failure or success in treatment. For example, Steen[1] carefully constructed such a plan for the manic-depressive psychoses, pointing out that the prognosis was good in those cases presenting "normal" prepsychotic personalities, clear heredity, no previous attacks, and an abrupt onset of a typical manic or depressive reaction with no delusions or hallucinations.

With this idea in mind, an attempt was made to accomplish similar results in the involutional psychoses. For this purpose, those patients were selected who were admitted to the female reception service of the Pilgrim State Hospital during the first complete fiscal year (July 1, 1936 to June 30, 1937), and later diagnosed as involutional psychoses. In determining the particular types of such cases, the terms "melancholia," "paranoid" and "mixed" are used, the latter term signifying either mixtures of the first two or an ill-defined type of involutional syndrome. However, during that year there were no mixed types, all cases being considered either melancholic or paranoid.

There were 66 patients in all, but four of them died shortly after admission so that our computations will be based on a working total of 62. In passing, it is of interest to note that the deaths occurred exclusively among patients diagnosed involutional psychosis, melancholia. Histories were covered for statistics on the following subjects: type of diagnosis, age on admission, family history, personality, onset of psychosis in relation to time of admission, history of

suicidal attempt, relation of the onset of the gynecological menopause, and parole from the hospital.

Some of the results were distinctly disappointing. However, this is not surprising in the light of the interesting article by Palmer and Sherman.[2] They state that study of the total life pattern reveals a life-long fundamental process, a reaction type in the Meyerian sense, which bears characteristic stigmata from birth to death. They speak of "rigidity" as characterizing chiefly the unconscious adaptive mechanisms which the patient has constructed to effectively control the instinctual forces. "Control" is probably not an adequate word; something approaching the notion of strangulation would serve better. Likewise, they feel that the syndrome is a distinct entity not to be associated with the manic-depressive group, and that it has a prepsychotic history and psychotic content differentiating it from any other psychotic reaction. They feel that the amount of "rigidity" of the life-long personality of each patient can be utilized as a yardstick in gauging the malignancy of the psychosis. Similarly, they found that when the onset (in women) occurred after the age of 45, the prognosis was distinctly unfavorable; as it was in cases where marital adjustment was poor and where harmony in the domestic circle was lacking.

Type of Diagnosis

Of the 66 cases, 43 were diagnosed as melancholic and 23 as paranoid. This means that, in the examination of any figures concerning the involutional psychoses, the ratio of the melancholic to the paranoid type of almost 2 to 1 must be borne in mind. It will be seen that the diagnosis, *per se,* is indicative of the outcome of the illness.

Age

Palmer and Sherman, in tabulating their results, indicate that the outlook for recovery in women was unfavorable when the onset had occurred after the age of 45. In our group, of the 38 cases paroled from the hospital, 22, or 58 per cent, showed onset of illness after the age of 45. This figure is too close to the half-way percentage point to indicate whether or not prognosis is affected by the age of the patient at the time of onset.

Family History

Seventeen of the 66 cases showed "poor heredity" in that direct blood relatives had suffered mental illnesses. These familial syndromes included schizophrenia, psychosis with cerebral arteriosclerosis, manic-depressive psychosis, psychoneurosis, involutional psychoses, and others. Of the 17 cases, 11, or 65 per cent, were eventually paroled. Hence the stigma of unfavorable family history seems to play no important role in determining prognosis.

Personality

Generally speaking, the prepsychotic personality statistics were unrevealing. Introversion and extraversion, schizoid and cycloid types, depressive and irritable individuals—all were found separately and in various combinations among those patients who recovered and those who did not, with equal frequency. In fact, it was significant to note how frequently individuals subsequently diagnosed as paranoid had prepsychotic personality traits described as "open, affectionate, friendly, generous and sociable." Conversely, those considered to be melancholic were often described as "irritable, seclusive, asocial," or "happy, buoyant and never depressive." In this respect, it might be said that histories of marital and sexual maladjustment were not so illuminating as were the figures of Palmer and Sherman.

Onset

A question was raised concerning the relation of extended onset of illness to recovery or nonrecovery. Steen spoke of the acute onset as a favorable omen in the manic-depressive psychoses. Such was not the case in our group of involutional syndromes. Time of onset before admission varied from a period of days to several years, but recovery was attained by patients without any relation to the acuteness or chronicity of onset.

Suicidal Attempt

Of this group there were 13 patients who had attempted suicide previous to admission. All of them were subsequently diagnosed as melancholic. This is conceivable, however, when the situation is reviewed in the light of Freudian concepts concerning depression and suicide. Freud has shown that the superego, the ego, the mari-

tal partner and the introjected mental picture of the marital partner have never been well differentiated. The eventual attempted suicide is actually homicide of the parent (introjected mental picture), in which the ego is liberated from the superego. "Oedipus kills his father internally"—that is, once the psychological break is made, recovery is assured. Therefore, we would expect all patients with histories of suicidal attempts to recover. Such was the case, excepting one patient who was 60 years old on admission. Her clinical picture was complicated by cerebral arteriosclerosis which necessitated her stay in the hospital.

Climacterium

Is the prognosis affected in those cases wherein the gynecological menopause is already established prior to onset or admission to the hospital? One hesitates to express an opinion on this point as there were only nine patients of the 66 who had not passed completely through the climacterium before admission. Of these, six recovered and were paroled. These nine cases were represented in both types of diagnoses. Nevertheless, the figures are too small to warrant any conclusion.

Parole

As mentioned previously, the type of involutional psychosis and the parole and recovery rates are intimately associated. Of the total of 62 patients, 38 were eventually paroled as much improved or recovered. This represents a parole rate of 61 per cent. However, only eight were of the paranoid type. Therefore, we can expect that recoveries of the melancholic type will exceed those of the paranoid, in a ratio of approximately 4½ to 1.

Illustrative Cases

1. B. F. Patient was born in Russia in 1888. Education was meagre. Birth and early development not significant. Married at an early age; marriage is regarded as satisfactory. Medical and surgical history negative. Gynecological menopause established in 1932. Regarded as always having been seclusive, asocial and refusing to mingle with others. Six months before hospitalization she became markedly paranoid, suspicious, and believed that neighbors were plotting to do her harm. No history of depression, agi-

tation or suicidal thoughts. Diagnosis: Involutional psychosis, paranoid type. Continues in hospital, unimproved.

2. S. D. Patient was born in this country in 1896. Early history essentially negative. Grammar school education; followed domestic work in occupation. Medical and surgical history negative. Climacterium not established. Eighteen months prior to admission she became depressed, agitated, apprehensive and worried, with devastating ideas of universal destruction and death and finally attempted suicide, for which she was hospitalized. Diagnosis: Involutional psychosis, melancholic type. She rapidly improved, gained insight and was paroled 10 months after admission. She remains out of the hospital at this time (two years later).

3. L. B. Patient is a negress, born in the southern part of the United States in 1882. Education minimal, was always a domestic. Medical and surgical history negative. Climacterium established at the age of 50. Happily married and the mother of three children. Six months prior to hospitalization suddenly became depressed, agitated and wept almost continuously. Believed she would die and also expressed ideas of unreality. Finally attempted suicide and was institutionalized. Diagnosis: Involutional psychosis, melancholic type. Rapidly improved and was paroled three months after admission. Remains out of the hospital at this time (two and a half years later).

4. L. B. White female, age 42. Mother and brother both hospitalized as paranoid schizophrenics. Excellent education, but because patient was so markedly shy and seclusive she was unable to hold a position for any length of time and likewise failed to attain heterosexual adjustment. Medical and surgical history negative. Climacterium established one year prior to admission, but for two years patient had been showing increasing depression with self-condemnatory and accusatory ideas. Admitted suicidal thoughts. Diagnosis: Involutional psychosis, melancholic type. Continues unimproved in the hospital.

Summary

1. The possibility of establishing a criterion for prognosis in the involutional psychoses has been discussed. Figures were based on the total female admissions to the Pilgrim State Hospital diag-

nosed under involutional syndromes during the fiscal year of 1936-37.

2. Statistics included: type of diagnosis, age on admission, family history, personality, onset of psychosis in relation to the time of admission, history of suicidal attempt, influence of the climacterium, and parole from the hospital.

3. The results were generally unproductive except that it might be said that prognosis is favorable to a greater extent in the melancholic type than it is in the paranoid. It is distinctly favorable in those patients who have made a definite suicidal attempt prior to hospitalization.

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THE INJECTION TREATMENT OF VARICOSE VEINS IN A STATE HOSPITAL

BY MURRAY A. YOST, M. D.

Many physicians in State service, in their zeal to become good psychiatrists, think and work almost exclusively in terms of conflict, repression, libido and other psychic mechanisms. Because of this, very frequently, their own medical knowledge and interests are relegated to the background. The large number of patients admitted yearly to our institutions affords rich opportunities for work along medical and surgical lines. A physician who has had considerable experience in State service once expressed himself as feeling that the ideal man for the mental hospital is the "good general practitioner who is psychiatrically minded." The majority of physicians in State service have adopted to a great extent Adolf Meyer's philosophy of "treating the individual as a whole." This has come about because it is the most practical method of obtaining results with large groups of patients where time and personnel shortage act as great deterrents to intensive and individual psychotherapy.

Frequently, however, the physician in his endeavor to uncover unconscious mental mechanisms loses sight of minor somatic complaints which, if relieved or eliminated, would serve as a contributing factor toward restoration of the patient's mental health. These somatic complaints, though often part of the patient's delusional system, should not be dismissed lightly, for occasionally considerable affect is vested therein.

Consequently, it is considered only proper that the surgical treatment accorded psychotic patients be the same as if they were patients in a general hospital. This should be done whether the physical defects are considered as etiologic factors or merely as incidental to the psychoses. There is often a multiple etiology producing the psychotic state in many of our patients, and the elimination or alleviation of one of the causative factors is a step toward the restoration of normal functioning of the individual as a whole.

The injection method of treatment is still regarded with suspicion by many physicians because of "local pain, systemic reaction due to drug idiosyncrasies, the occurrence of sloughs, and

the supposedly high incidence of recurrences." Notwithstanding, attempt will be made herein to show that with care and proper technique the above factors can be reduced to a minimum even in the psychotic.

Etiology

A review of the literature on the etiology of varicose veins reveals that hereditary and congenital factors account for approximately 70 per cent of the cases. It is not uncommon to find that patients with a family history of varicose veins have other evidences of connective tissue weaknesses of the venous and ligamentary structures, such as hemorrhoids, varicoceles, and pes planus. These people are born with abnormally weak vein walls so that, when they are subjected to the stresses of adult life, there is increased congestion in the veins of the extremities, and the vein walls give way to dilate. Such stresses of adult life include pregnancy, long hours of standing, and lifting of heavy loads, all of which increase intraabdominal tensions. Then again, because many varices occur during the two important periods of life, puberty and the menopause, the possibility that endocrine disturbance may play a part in varix etiology must not be overlooked.

Anatomy

The superficial veins of the leg and thigh are the long and short saphenous. The long saphenous, which has from 10 to 20 bicuspid valves, collects the blood from the anterior foot, leg and thigh, and empties into the femoral vein on the medial aspect about two inches below Poupart's ligament. The short saphenous extends up the posterior leg to empty into the popliteal below the knee. Both anastomose freely with each other through their branches, and with the deep veins through the communicating veins. These branches have valves which admit blood from the superficial system into the deep system, whence it is carried to the heart. The saphenous veins are entirely without fascial support which favors their dilatation.

Pathology

Man's erect posture has subjected this particular group of veins to unusual strain, and their anatomic course in the superficial tis-

sues largely deprives them of efficient pumping action by the muscles, which materially aids in the venous flow in the deep veins. Pressure in the column of blood causes the valves to become inadequate and dilatation occurs in the great saphenous vein. Continued pressure causes dilatation, tortuosity and sacculation. Anoxemia and accumulation of metabolic products interfere with the nutrition of the skin. These are manifested by edema, later pigmentation and ulceration, which occurs above the ankles on the inner side of the leg. Trauma is frequently a factor in the incipiency of ulcer. The ulcer usually becomes infected and increases in size, and edema persists. Scar tissue is formed and one sees the picture of brawny edema with extensive ulceration.

Symptomatology and diagnostic signs

Symptoms are variable, and the amount of discomfort is not necessarily in direct proportion to the extent of varicosity present. Of the 1,250 patients examined, 80 had at least second degree varicosities. In selecting the final group of patients for treatment, the mental status of the patient was considered. Obviously, any patient who was resistive and uncooperative was immediately eliminated. The type of patient preferred was one who was not greatly deteriorated and who, after the procedure was explained to her, expressed a willingness to undergo the treatment. Further, effort was made to select only those patients who had been handicapped physically by their varices, and who would, if improved, take advantage of their relief from symptoms to play a part in the integral functioning of the hospital.

Several of the patients on occasion have voiced their lack of desire to participate in various activities because of conspicuously ugly and painful extremities. One patient, who has had experience along dramatic lines, could not be induced to take part in any of the hospital productions because her "leg ulcers" showed through her sheer hose and would be prominently displayed on the stage. Because she exhibited many schizoid features it was thought most essential that all measures should be taken to prevent her seclusive and introspective symptoms from becoming aggravated. Accordingly, varicose vein injection treatments were instituted at once, with excellent results. Shortly after this she began to take an

active interest in the hospital, being no longer "ashamed to appear." By working with her "personality assets," many of her symptoms of introversion were relegated to an inferior position and today she is making an excellent hospital adjustment.

Another factor of primary importance in the treatment of psychotic patients with physical disease is the rapport which is frequently established as a result of this treatment. Frequent contact with the physician, with tangible evidence of physical improvement as a result of his treatment, insures a positive transference which sometimes can be obtained in no other way. Patients who are evasive and suspicious often are made more amenable to psychotherapy by the interest and attention paid by the physician to their bodily symptoms. This perhaps explains why the general practitioner becomes so frequently the confidant or father confessor of the mental problems and conflicts which beset his patient.

Therefore, while the "cure" of the patient may not be obtained by correction of physical defects, removal of foci of infection, etc., material benefit may result both for the patient and for the institution. The patient may, after the correction of some minor physical defect, become a useful ward worker and enjoy many of the privileges accorded a physically healthy patient.

A number of patients were eliminated from treatment because of definite physical contraindications to treatment. These will be dealt with subsequently. A group of 42 patients deemed suitable for treatment was finally selected. Of these patients, 10 had first degree varicosities, 20 had second degree and 12 third degree. This is an arbitrary method of grouping varicosities and simply gives the examiner a relative idea of the degree of involvement. Other workers have different methods of grouping their patients.

Essentially all the patients complained of a tired, heavy feeling in the legs with a sense of fullness, occasional swelling of the dorsum of the foot, and often marked cramps. Usually the skin felt tense and the patient complained of soreness along the course of the saphenous nerve, accompanied by burning and pruritis.

In most cases, simple inspection and palpation supplied ample information to make a diagnosis. In obese patients light palpation often revealed, as diagnostic signs, beadlike swelling over the position of the valves and tortuosity with sacculations. In this group,

16 patients had definite edema of the ankles; 12 had a marked degree of eczema with pigmentation and "brawny" induration; 8 had open ulcerations. Palpation is important in determining the presence of edema and cirsoid dilatations, especially in the thigh. Cirsoid enlargement of the great saphenous vein in the fossa ovalis may be mistaken for femoral hernia. Bimanual palpation will distinguish the two conditions. If the enlargement is a cirsoid one, pressure on the dilatation will be transmitted in the vein and the impulse will be palpated in the lower third of the thigh and in the leg.

Before any treatment is begun, there should be a careful evaluation of the circulation in the venous system of the affected extremity. The tests supply adequate information relative to the above. The first test, that of Trendelenburg, is used to show whether the valves in the saphenous vein hold up the column of blood. In about 40 per cent of the cases here discussed, these valves do support the column of blood.

The technique of the Trendelenburg test is as follows: The patient is asked to lie upon her back. The leg is elevated, and the vein is emptied by massage. A tight tourniquet is placed around the thigh at the upper end of the saphenous vein and the patient is asked to stand. The fingers are placed over the most prominent veins and the tourniquet is released. A sudden downward rush of blood indicates failure of valves to hold up the column of blood. This is known as "back pressure." When "back pressure" cannot be demonstrated and the veins fill slowly from below, it indicates no serious damage of the valves in the saphenous veins.

The second test is Perthe's test, which tests the competency of the deep veins. With the patient standing, a tourniquet is applied above the knee, causing dilatation of the superficial veins. The tension of these veins is tested with the palpating finger. After active kicking or walking, the veins feel less tense to the palpating finger, if the deep circulation is intact. This occurs because the blood is forced through the communicating branches. The test was never positive in this group of patients. To corroborate a positive Perthe test, the following procedure is used: A snug bandage is applied to the foot and leg, and the patient is instructed to walk

briskly. If the deep circulation is impaired, there will be increased pain, edema and color changes in the foot.

Evaluation of the patient's progress was attempted initially by a series of descriptive progress notes. However, it was soon found that a more graphic description could be obtained from a group of drawings. By means of these drawings, the sites of injections could more easily be located from week to week. Previous lesions, such as ulcers and eczemas, could be readily located at a glance. The drawings also enabled one to note the reactions following each treatment. Before giving a new injection, the results obtained from the last treatment are ascertained and noted. In addition to this, the patient's status at the initiation of the treatment is recorded with emphasis on such items as presence of ulcers, eczema, edema and degree of varicosity.

Contraindications to injection treatment

The contraindications to the injection treatment of varicose veins may be broadly divided into three groups. First, there is a group of patients who, because of their mental status, cannot practically be treated. This group includes the resistive, uncooperative patient and the patient whose mood fluctuates widely from time to time. Regularity of treatment is highly essential.

Second, there is the group of patients with systemic diseases: 1. Patients with hyperthyroidism require immediate arrest of this disease before the injection treatment is instituted. 2. Active tuberculosis is a contraindication. Subfebrile patients with slight pulmonary changes may experience relapses after the use of tissue irritants. 3. Acute colds and infections are frequent sources of infectious phlebitis and injection treatment may precipitate an attack. 4. Decompensated heart disease presents a definite contraindication. 5. Abdominal obstruction, as in pregnancy or pelvic tumors, producing back pressure on the veins of lower extremities, would interdict this form of therapy until such pressure is relieved. 6. Diabetes is a contraindication; however, when the peripheral circulation is maintained and the disease is under control by treatment, injections may be instituted.

Finally, one must consider the group in which there is associated impairment of arterial circulation. Those varices associated with

Buerger's disease should never be treated with injection, as superficial phlebitis commonly occurs in this disease. This is also true of cases which have marked arteriosclerosis.

Advantage of sodium morrhuate

Requirements of an ideal sclerosing agent have been enumerated by Verovitz. The solution should be of low toxicity, not only to permit repeated injections, but also to avoid pain and cramps. It should produce a firm, nonfriable, adherent clot, should not cause allergic reactions and should possess bactericidal properties. The writer has had previous experience with various solutions used in injection work. Of these, 25 per cent sodium chloride is the cheapest; it is nontoxic, and its action is prompt. However, it has two disadvantages, namely marked cramping and the danger of necrosis. Fifty to seventy-five per cent invert sugar is nontoxic and causes only slight cramping. However, the solution is too viscous, requiring large needles, and it often causes marked perivenous edema. Ten per cent quinine with urethane has a prompt action and is painless. However, the danger of cinchonism and anaphylactoid reaction is great. Of all the solutions used thus far, ten per cent sodium morrhuate comes closest to fulfilling the requirements of an ideal sclerosing agent. It causes no pain or cramp. The destruction of tissue with improper technique or extravasation is low. Individual idiosyncrasy and toxicity are low. Furthermore, it is a better sclerosing solution than any of the aforementioned agents. Sodium morrhuate is also useful in small veins and "spider bursts" or "sky rockets." Then too, tight bandaging is not necessary, for the needle puncture seals up rapidly.

Treatment technique

The technique is relatively simple, and if care is exercised complications can be kept to a minimum. The patient and operator should both be in a comfortable position with good light. Usually the patient is seated in a high chair and the operator on a low stool which has a footrest in front of it. The site of injection is sterilized. The vein is emptied before injecting, to aid in concentration. A tourniquet is placed above and below the site of injection. This tends to localize the sclerosing fluid and prevents recanalization of the vein. The syringes used are glass syringes with Luer tips. The

ideal needle is one with a short bevel and small bore (23 to 24 gauge). The veins selected are injected first in the feet and then up the great saphenous trunk to the saphenofemoral opening. The sclerosing effect at many scattered points along the vein ensures a firm thrombus. The thrombus, according to Aschoff, occurs because of the stagnation of the blood stream, the destructive reaction on the vein wall and the reaction on the blood constituents. Before injecting, one should aspirate for blood. The injection should be made slowly with frequent aspirations to see if the needle is still in the vein.

Following the injection, pressure is maintained for 48 hours with dental cotton and a strip of adhesive. The patient is allowed to continue her daily routine, and injections take place weekly or more frequently, as indicated by the results. If extravasations occur, 10 c.c. of normal saline is infiltrated around the site immediately. The usual dose of sodium morrhuate is 3 or 4 c.c. However, in unusually large veins correspondingly larger doses may be used.

Complications and accidents

In any large group of patients treated, a certain percentage of accidents will result. However, these will be kept fairly low if certain important recommendations are adhered to. First of all, extravenous injection should be avoided. The signs of this are immediate stinging, burning pain and blanching of the skin at the site. This area later becomes dusky red and usually is followed by sloughing with a slowly healing ulcer. It must be remembered that any drug caustic enough to destroy the intima of a vein and to produce occlusion is strong enough to destroy perivenous tissue and produce a slough when injected outside the vein.

Embolism is rare, and did not occur in the cases studied here. The application of tourniquets, which hold the sclerosing solution in contact with the vein walls, seems sufficient to prevent any such occurrence.

In this group of patients, two cases of postobliterative infectious phlebitis occurred. At the time of injection, both of these patients were suffering from upper respiratory infections. A review of the literature on the subject reveals that this condition occurs most frequently in those who have active foci of injection, even distantly re-

moved. It is important, therefore, to postpone injections in the case of patients suffering from active upper respiratory infections.

Occasionally the patient reacts to the injected drug with gastrointestinal disturbances in the form of nausea and vomiting. This is apparently due to the liver protein remaining in the solution. Severe reactions can be prevented by observation of the patient following an initial small dose of the drug.

Results

Many workers believe that good results cannot be obtained where there are extensive varices, unless they resort to ligation. They follow up high ligation with the injection method. Their essential argument is that unless this is done, there will be a large number of recurrences, because of recanalization. There is no question that high ligation, in unusual cases, is the only treatment with permanent results. Because of the ever-present mortality risk, however slight, operation should be avoided when possible. Those patients who may have recurrences can always be reinjected. It is a simple nondisabling method of treatment as compared with the ligation method where the patient remains in bed and incurs a certain amount of pain and scarring. Then too, the cost of the injection method of treatment is much lower than ligation and injection.

Of the eight ulcers encountered in the group, seven healed completely in three or four months. Some of these ulcers had been present for years previously. Healing occurred promptly following the obliteration of the large veins and the reestablishment of adequate nutrition to the tissues. The ulcers surrounded by "brawny" indurated areas healed somewhat more slowly because of the difficulty of finding and injecting the adjacent veins. No special ointment was applied, nor was any particular local treatment used, although occasionally Lassar's paste was used as a protective dressing.

The average number of injections was eight, although in marked cases as many as twenty injections were given. In almost all cases in which eczema was present, improvement was seen following the obliteration of the varices. Many patients who hitherto had been unable to stand on their feet for long periods of time, were able to occupy themselves in the laundry without much discomfort.

In some patients, an improvement in attitude was noted in the form of increased cheerfulness and willingness to participate in hospital activities, with relief from the sensation of fatigue, burning and occasional cramps.

The following case is cited as exemplifying the beneficial mental results obtained by attention to minor physical disabilities.

M. I., admitted about one year prior to the inception of her varicose vein injections, was diagnosed manic-depressive psychosis, mixed type. Physically, the only findings of note were those of diabetes mellitus and second degree varicosities. During her first few months residence in the hospital she was markedly depressed, cried and moaned continually, and showed considerable retardation. This was followed by a typical manic reaction during which time she was overactive, showed flight of ideas, and was generally agitated. Her trend was of a paranoid nature directed, in the main, against her husband. She accused him of infidelity accompanied by the wish to get rid of her by poisoning. She was treated for two weeks with warm wet packs and sedation, with considerable success in that she was less agitated and resistive. However, she continued to express the feeling that her husband disliked her, offering as a likely reason her "ugly, disfigured legs." The patient at this time exhibited bulging, distended varicose veins with stagnation edema and pigmentation of both ankles. With the gradual improvement in her mental condition, the patient evinced considerable insight but expressed doubt as to her ability to adjust at home with her husband because of her physical disability. She stated that because he was a rather fastidious person, inclined to be critical of her appearance, the abnormal condition of her legs would be sufficient for him to remain disinterested in her. It was continually evident that considerable emotion was vested in the appearance of her legs and that she would feel inferior so long as this condition existed. The injection method of treatment was explained to the patient and she at once displayed a keen desire to undergo the series of treatments. The treatments were then instituted; after four weeks there was a lessening of the edema about the ankles and sclerosis of the superficial veins. The patient was much impressed by the progress made and expressed her gratitude frequently to the physician. Advantage was taken of this opportunity to establish rapport and the patient disclosed much of her emotional life, not previously revealed, during the course of the treatment. After three months of treatment, all the superficial veins were obliterated and essentially all of the edema and pigmentation had disappeared. The patient was very proud of the appearance of her legs and exhibited them freely to her fellow patients

and to her husband. She took an active interest in the ward activities and at the present time is most anxious to return to her home. There is little doubt that, in this particular patient, the improvement in the cosmetic appearance of her legs was one of the various factors instrumental in her improvement. At the same time, positive transference was more easily established between patient and physician because of the definite physical improvement. As a result of this transference, the patient's conflicts were made more accessible and capable of solution.

Summary

1. Forty-two patients with varicose veins were treated by the injection method.

2. The injection technique is a relatively simple procedure.

3. Seven of eight ulcers treated healed over completely, and it was felt that by treatment of the larger veins new ulcer formation was prevented.

4. Patients with edema and eczema showed improvement.

5. Sloughs and reactions were rare and there were no serious complications.

6. Sodium morrhuate was the solution of choice because of the excellent results obtained with it, the small amount of solution necessary, and the ease of administration.

7. Recurrences are infrequent and should not be confused with the formation of other, new varicose veins.

8. Some patients showed an increased ability to adjust in the hospital, with elimination of disfiguring veins and relief from pain and fatigue.

9. Transference is more easily established between patient and physician by attention to the patient's physical disabilities, including those of lesser severity.

10. Because of the multiplicity of etiologic factors in the production of many psychoses, the removal of even a minor one is a step toward restoration of normalcy.

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TESTOSTERONE IN PSYCHOTIC MALE HOMOSEXUALS

BY HYMAN S. BARAHAL, M. D.

Overt homoerotism is a matter of rather common observation, in institutional life and indeed wherever segregation of the sexes, over prolonged periods of time, is practised. This is particularly true of institutions for the mentally ill, although no reliable statistics as to its frequency are available.

It is not the purpose of this paper to enter into the controversy regarding the etiology of homosexuality. This dispute is not unlike that regarding other behavioral disorders in which there always arises the question of whether we are dealing with a purely hereditary or organic condition, a psychological reaction to environmental influences, or with a psychosomatic combination of these two factors.

Nor is it the present purpose to quarrel over what constitutes homosexuality. If we accept the psychoanalytic viewpoint, we shall be forced to classify as homosexuals all patients expressing delusions of persecution and exaggerated likes and dislikes toward members of the same sex. We would have to include also individuals who, in their dreams as well as in their everyday activities, symbolically manifest homosexual tendencies, without conscious overt behavior. Such a classification would undoubtedly involve the greater proportion of the psychotic as well as of the so-called normal population, for the freudian discipline has shown that our lives are motivated to a greater or lesser degree by unconscious homosexual drives.

On the other hand, if we include in our grouping only those patients exhibiting conscious overt activities, we shall find it difficult to explain the frequent socially acceptable homosexual practices, coexisting with apparently normal heterosexuality, as was known among the ancient Egyptians, Greeks and Assyrians.[1]

Some cases of homosexuality, however, appear to be indefinably interwoven with an endocrine disturbance of a gonadal type. It was therefore believed pertinent to determine the changes which could be produced by the administration of an active testicular hormone to psychotic male homosexuals displaying some physical signs of deficiency in the secondary sexual characteristics. Effects

would then be sought either in the physical makeup, the psychotic manifestations, or in the force or direction of the homosexual drive.

Until recently such a study would have been impossible, due to the lack of a product representing the pure testicular hormone. In 1927, McGee[2] reported the first successful preparation of the male factor. In the same year, Funk and Harrow[3] isolated from male human urine a crude substance which produced growth of the capon comb. This substance they called "the male hormone." In 1931 Butenandt,[4] also using male human urine, isolated a pure crystalline substance with a melting point of 178°C. and capable of stimulating growth in the capon comb. He named this product androsterone. In 1934, Ruzicka, Goldberg, Meyer, Brüngger, and Eichenberger[5] were able to prepare Butenandt's substance synthetically from cholesterol. Although the substance isolated from male urine produced physiological stimulation, it was discovered that it differed widely from the substance obtained from testicular tissue.[6, 7, 8] In 1935, David, Dingemanse, Freud, and Laqueur,[9] isolated from testes a pure crystalline substance having a melting point of 154°C., and which appeared to be more active than androsterone. They named this substance testosterone. In the same year, Ruzicka and Wettstein,[10] were able to prepare the same substance synthetically from cholesterol. It is this substance, in sesame oil, which was used in the present study.

From the recent experimental and clinical reports in the literature, it seems evident that testosterone is a potent product, able to produce profound physiological changes. Hamilton[11] was able to bring about, in a 27-year-old eunuchoid, erections to the point of priapism, enlargement of the penis and scrotum, descent of the testes, increase in size of the prostate, lowering in pitch of the voice (questionable), and the appearance of hair on the chest, pubis and upper lip. He was also able to stimulate growth in, and maintain the function of, the male reproductive tract in immature children as well as in castrated animals.[12] Bauer and Koch[13] obtained almost identical results in a 26-year-old eunuchoid. Schmitz[14] treated older men with smaller doses of testosterone propionate, with improvement in the sense of well-being and stimulation of sexual desire and nocturnal emissions. Untoward results,

aside from an occasional priapism, are rarely mentioned, although Moore and Price[15] have noted testicular atrophy in immature rats, following treatment with testosterone. It is doubtful whether this effect could occur in adult animals or humans. Hamilton and Leonard[16] report a definite testicular hypertrophy in rats, as a result of the administration of testosterone.

For the purpose of this study, only those patients were considered who persistently and overtly participated in active or passive homosexual activities and had been observed in such practices, on numerous occasions, by the nurses and attendants on the ward. Of a total of 342 patients studied, 37, or approximately 10 per cent, were found to be overtly homosexual. It is probable that there were a few others whose activities were too secretive to be known, but this number is believed to be negligible. No patients were included who were not overtly homosexual, regardless of their mental content. Of this group of 37 cases, seven were chosen for treatment because of the presence of one or more physical signs generally attributed to gonadal insufficiency, as characterized by the body build, hair distribution, fat distribution and so forth. These seven cases were treated for a period of 18 weeks, receiving 25 mgm. of testosterone propionate intragluteally, thrice weekly. Cases six and seven have been continued since then with daily injections of the same dose, but with no further essential changes in their mental or physical makeup other than those reported.

Case Reports

Case 1. Male, white, age 25, diagnosed dementia præcox, catatonic type. There is no history of nervous or mental disease in the family. His childhood was uneventful. He reached the second year of high school when 14 years of age. He was intelligent, and his chief interests were reading and writing. Little is known of his sex life, except that it was believed that he masturbated excessively. He held a position as table clerk in Wall Street, earning $19 a week, for about three years prior to his admission to the hospital. He had always been rather seclusive, and evinced no interest in sports. He began to show marked peculiarities in his behavior in May, 1933 when he became somewhat confused and failed to follow the simplest directions. He complained of people

calling him names, such as "pansy" and "mother's boy." He also stated that his neighbors talked about him and called him feminine names. On May 3, 1933 he attempted suicide by opening the gas jets and was committed to Kings Park State Hospital. There he was found to be somewhat uncooperative and inaccessible. He appeared to be in a catatonic stupor. He had to be tube-fed for a short period. On September 12, 1933 he received CO_2 therapy which resulted in a lucid period of about 25 minutes, during which he was able to answer questions. He expressed the idea that his mother was really his stepmother and that she was "insane" (incorrect). After this, he lapsed into his previous state. He has continued in essentially the same condition during his entire residence in the hospital. He masturbates frequently and persistently takes part in passive homosexual activities.

In March, 1938 he began to receive metrazol treatments, but, following a full course, failed to show any marked improvement.

On August 27, 1938, a course of testosterone propionate was begun. At that time he showed some physical signs of gonadal insufficiency. He had only a few hairs on his face, (confined to the chin and upper lip), no hair on his chest, and only a few axillary hairs. The hair over the pubis was definitely of a feminine type and distribution. The external genitalia were fairly well developed. There was no abnormal fat distribution over the body. He received four and one-half months of treatment with testosterone: 25 mgm. doses three times weekly. There resulted an increase in the amount of hair over the pubic as well as axillary regions. There has been no increase in the facial hair, and only a slight increase in the size of his external genitalia. There is now a definite increase in his masturbatory activities, as well as in his homosexual practices.

Case 2. Male, white, age 30, diagnosed dementia præcox, hebephrenic type. The patient's father was heavily alcoholic, a sister was confined to a mental institution in Lithuania, and a maternal aunt was considered "insane." Little is known of his personal history, except that he completed the ninth grade in school at the age of 18 years, in Lithuania. He worked as a railroad laborer, then as a truck driver. He was unemployed for some time, but subsequently obtained employment in the coal mines of Pennsyl-

vania. He joined the army in 1932. He admitted many heterosexual experiences, and denied masturbation and sex perversions. In 1932, while driving a truck containing army prisoners in Panama, he suddenly abandoned the truck, and ran into the bushes, explaining afterward that he was afraid of the prisoners. He insisted that he wanted to see the chaplain, in order that he might confess something. He expressed the idea that he was going to be killed, and was noticeably suspicious and frightened. He admitted auditory hallucinations, and thought that someone was going to poison his food. After a short period of apparent recovery, he became worse and was admitted to Kings Park State Hospital March 20, 1935. Throughout his stay in this hospital he has been uncooperative, hallucinated and assaultive. He masturbates a great deal and practises both active and passive homosexual relations.

Prior to the institution of testosterone therapy, he was found to have scanty facial hair, external genitalia of normal size, and a rather high-pitched voice. His pubic hair was not definitely feminine. Following four and one-half months of treatment, consisting of three 25-mgm. injections weekly, there resulted a definite increase of hair over the pubic region, approaching more definitely the masculine type of distribution. There has been no increase in facial hair, nor change in the voice. There has resulted an increase in his masturbatory and homosexual activities.

Case 3. Male, white, age 30, diagnosed dementia præcox, catatonic type. The family history is negative for nervous or mental disease. His development was uneventful. During childhood he had an operation for right inguinal hernia and for tumor of the right breast. He completed the eighth grade of grammar school and then obtained a job at the postoffice. He had always been an active, sociable individual and indulged in athletics. About four years prior to his commitment, he left his home in Maryland to seek employment in New York City. He was unable to find a job and became worried over it. Almost nothing is known about the onset of the psychosis, except that he was found nude on the Brooklyn Bridge and sent to Kings Park State Hospital on March 2, 1933 where he was uncooperative. During the examination, he admitted hearing the voice of his friend telling him what to do and what not to do. He appeared somewhat confused and preoccupied,

and talked irrelevantly and incoherently. He explained his taking off his clothes on the Brooklyn Bridge by saying that there would be a purer existence and that he would therefore not need any clothing. He expressed some ideas of guilt, saying that he had committed some sin of a sexual nature. He said that he had practised masturbation for a long time and that he had frequently swallowed his own semen. During his entire stay in the hospital he has been silly, overactive, confused, destructive and assaultive. He has persistently masturbated and taken part in passive homosexual practices.

On August 27, 1938 it was decided to treat him with testosterone propionate. At that time he was found to have some physical signs of a gonadal insufficiency. He had a scanty growth of hair on his face, but a normal distribution of hair over his chest and abdomen. The pubic hair growth was not definitely of a feminine type. His voice was high pitched. The penis was quite large. The left testis was large and well developed, but the right one was markedly atrophied, apparently as a result of the previous herniotomy. The testosterone propionate was administered in 25-mgm. doses three times weekly, for a period of four and one-half months. There resulted a definite increase in the pubic hair growth, a marked increase in the size of the penis. There was no change in the facial hair growth, nor in the pitch of the voice. There was a marked increase in his masturbatory activities, and no change in his homosexual practices.

Case 4. Male, white, age 27, diagnosed dementia præcox, hebephrenic type. The family history is negative for nervous and mental disease. His early development is uneventful. He completed grammar school but could not attend high school because of financial difficulties. He worked as a messenger boy for two years and then as a clerk in a large office, where he was very efficient. He was interested in athletics. He was said to have masturbated considerably, and had no heterosexual experiences. He felt himself superior to women. During 1936 he became somewhat irritable, and began to express a fear of riding in subways because the train might run over him. He slept poorly, and stated that he was going to kill himself by jumping in front of a subway train. He began to speak a great deal about girls, saying that he did not know how

to act when a girl was around. He expressed the desire to associate with one, but said that he never spoke to girls because they always frightened him. He was admitted to Kings Park State Hospital on October 31, 1936, where he was found to be perplexed and bewildered. He admitted auditory hallucinations and ideas of reference, and frequently laughed without apparent reason. During his entire stay in the hospital, he has shown very little change. He is rather silly, inadequate, expresses nihilistic ideas, masturbates constantly, and practises passive homosexual relations.

When examined prior to beginning treatment with testosterone, he was found to have only a few scattered facial hairs, no hair over the chest, and a sparse growth in the axillae. The pubic hair distribution was not definitely feminine, the penis was extremely large, and the testes were of normal size. His voice was somewhat high pitched. Following four and one-half months of treatment with testosterone, consisting of three 25 mgm. injections weekly, he showed some physical changes, such as definite increase in the pubic hairs, a marked increase in the size of the external genitalia, no change in the pitch of the voice. Masturbatory activities, as well as homosexual practices, were markedly increased.

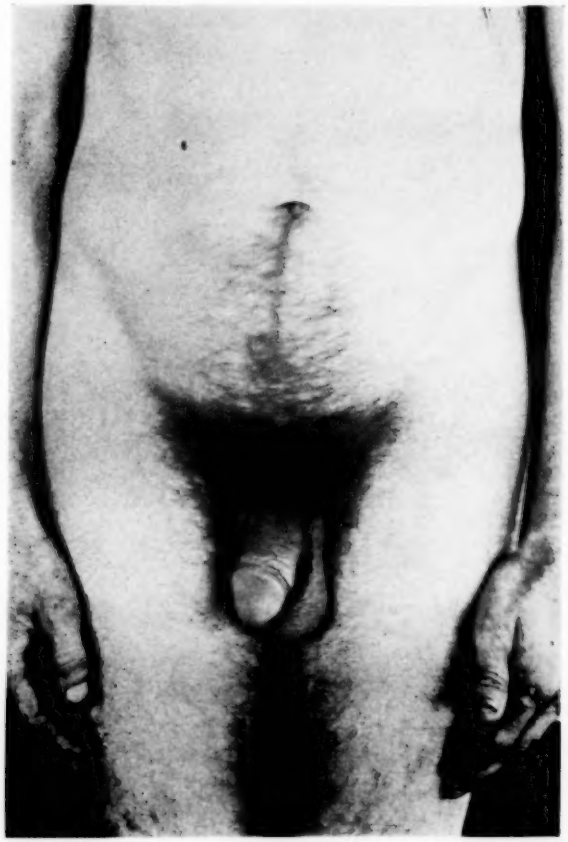
Case 5. Male, white, age 25, diagnosed dementia præcox, catatonic type. The family history reveals that a paternal aunt was in a mental hospital as a result of an involutional psychosis. His early development was normal and he had the usual childhood diseases. It is noted, however, that he had enuresis until 13 or 14 years of age. He was not very bright as a child and was graduated from grammar school at 16 years of age. Up to the time of admission, he was attempting to complete the second year of high school. He first shaved when he was 14 years of age, and was said to have masturbated a great deal at that time, although no definite information can be obtained regarding this. His psychosis is reported to have begun about 1928, when he began to lose interest in his surroundings, neglected his personal appearance, became irritable and quarrelsome, refusing to see people and to dine with members of his family. In 1932 he seemed to improve somewhat, but this did not last long. He began to complain of people making too much noise, and objected to the radio being played. He tended to assault anyone who merely spoke to him. He expressed the idea

that he was being watched. On a number of occasions he attacked his mother, once with a knife, and again with a pair of scissors, but would give no adequate explanation therefor. Throughout his stay in the hospital he has shown little change. He assumes rigid, catatonic postures, and must be led about from place to place. He wets and soils his clothes and requires assistance in dressing and undressing. He received a course of metrazol injections between the months of May and July, 1938 with no effect. Throughout his stay in the hospital, he has masturbated excessively and has persistently practised active homosexual relations with other patients.

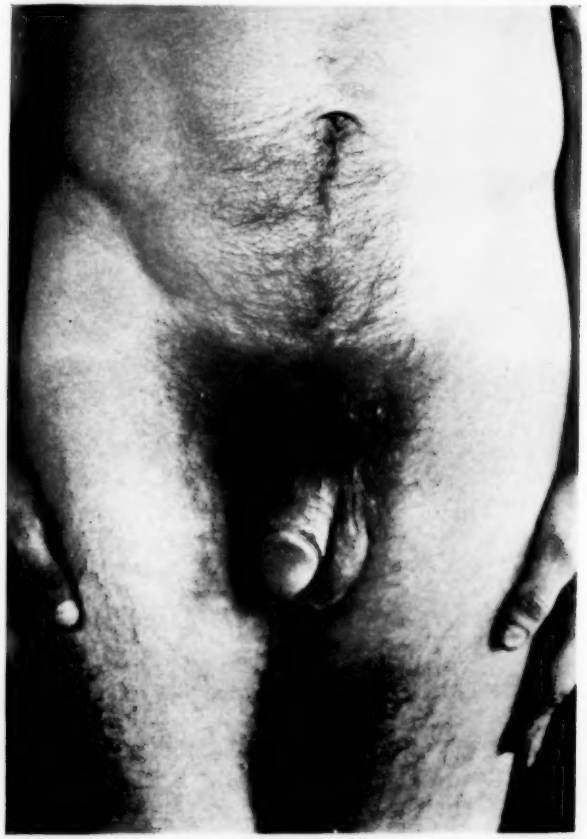
Prior to treatment with testosterone, he was found to have a fairly good growth of hair over his face, chest and abdomen. The pubic hair distribution was of a feminine type, the external genitalia small, voice high pitched, and the fat distribution rather feminine. He received four and one-half months of treatment with testosterone, consisting of three 25 mgm. injections weekly. There has been a marked increase of the hair growth over his abdomen and pubis, with the hair line beginning to change to a more masculine type of distribution. The testes have increased in size but there has been no change in the penis, fat distribution, nor in the quality of the voice. There has been a marked increase in his masturbatory activities, as well as in his homosexual practices.

Case 6. Male, white, age 29, diagnosed dementia præcox, catatonic type. The family history is negative for mental or nervous disease. His early development and childhood were uneventful. He was considered bright in school and reached high school at the age of 13. During his second year there, he began to show some difficulty in coping with the subjects, and was advised to go to a trade school. He was inattentive, and could not concentrate. At the age of 17 he was placed in a vocational school, but was unable to learn anything. He began to masturbate at the age of 9 and has continued this practice up to the present time. He has never been interested in girls, always having been shy in their company. He had a marked attachment to his mother, as well as to his grandfather. The latter petted and pampered him in every conceivable way and is said to have had a definitely unfavorable influence on him. Despite the patient's rather schizoid tendencies, it is noted that he was proficient in athletics, and a good amateur boxer. The

CASE 6



BEFORE TREATMENT



AFTER TREATMENT

psychosis began insidiously and was manifested chiefly by antagonism toward his father. In 1929 he found employment in a newspaper office, but worked only one night. When he came home, he stated that he "couldn't work there because there were too many Italians." The following day he complained of the Italians being after him. He began to talk to himself. In April, 1930 he ran away from home, only partially clothed, was picked up by the police and subsequently committed to Kings Park State Hospital on May 10, 1930. At the time of his admission, he had a perplexed expression, was manneristic, uncooperative, and inaccessible. He displayed stereotypy, echolalia and echopraxia. He has shown virtually no change throughout his stay in the institution. He frequently makes peculiar grimaces and is, at times, quite assaultive and impulsive, particularly toward his father. He has masturbated excessively throughout his stay in the hospital and persistently practises homosexual activities.

When examined prior to receiving testosterone injections, he showed an almost complete absence of facial hair. The external genitalia were normal, but he had a feminine pubic hair distribution. The skin was smooth and very finely textured. Following four and one-half months of treatment with testosterone, consisting of three 25-mgm. injections weekly, there were definite physical changes. Whereas previously he was shaved once in three weeks, he now requires three shaves weekly. There has been a definite increase in body hair, particularly in the pubic area, which is now assuming a masculine type of distribution. There has been an increase in the size of the penis as well as in the testes. He continues to masturbate a great deal, and there has been no change in his homosexual practices, nor in his mental condition, except that he has been much more tractable and has shown almost no impulsive nor assaultive tendencies for the past few months. Whether this improvement is due to the treatment or not can only be surmised.

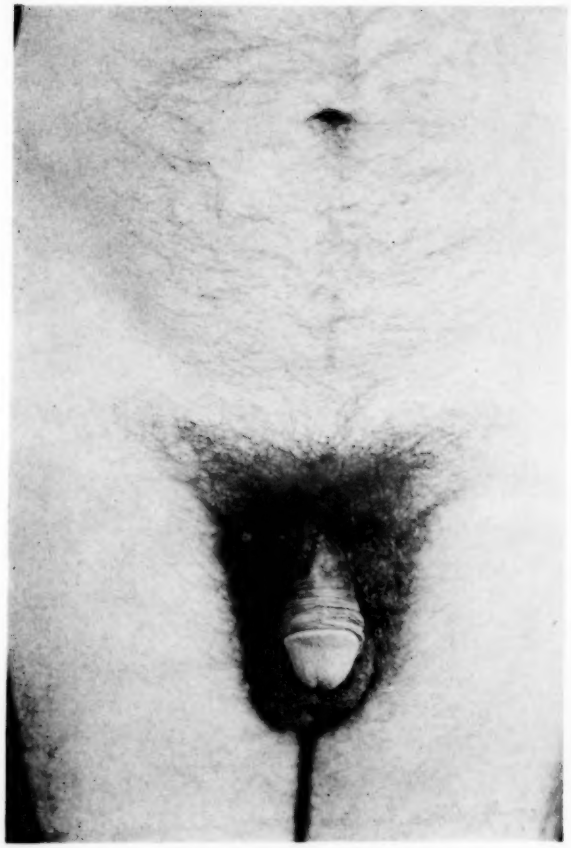
Case 7. Male, white, age 31, diagnosed dementia præcox, catatonic type. His family history is negative for nervous and mental disease. His birth and early development are said to have been normal. He was graduated from grammar school at the age of 12, and was considered a good student. Thereafter he attended busi-

ness school for one year, held various positions as bank clerk, store clerk, and was last employed as a salesman. His social life has always been limited. He preferred to stay at home, and to read a great deal. He is the only son, the younger of two children, and has always been strongly attached to his mother. Little is known of his sexual development, except that, against the wishes of his mother, he became involved with a woman, whom he married in August, 1932. It is said that they never lived together as man and wife. They soon separated, because his wife drove him from the house, saying that he was no good and would not work. According to the mother, the patient was tricked into his marriage by the woman who promised him financial security. During the early part of 1934, the patient was noted to be worried and anxious concerning employment. Later he became excited, overtalkative, and said that he was a state trooper and a radio announcer. He went about ringing doorbells and shaking hands with people he did not know. At other times, he sat at home, saying nothing and refusing to eat. It was therefore decided to have him committed to the hospital.

Throughout his stay at Kings Park, where he was admitted on March 12, 1935, he has been restless, overtalkative and expansive. He showed strong homosexual traits. He has, on occasions, also shown destructive tendencies, breaking windows and tearing his clothes. He received insulin and metrazol therapy, without improvement.

Prior to the institution of testosterone therapy, examination revealed some physical signs of gonadal insufficiency. He showed feminine mannerisms, a feminine distribution of pubic hair, with, however, an abundance of facial as well as body hair. The external genitalia were of normal size, the voice somewhat high-pitched, the body fat distribution of a somewhat feminine type, and the breasts moderately prominent. Testosterone propionate was administered for four and one-half months in 25 mgm. doses three times weekly. There has been a marked increase of pubic hair, as well as in the hair over the abdomen. There has been some increase in the size of the testes, no change in the pitch of the voice, and an increase in his masturbatory and homosexual activities. His behavior has shown considerable improvement. He is some-

CASE 7



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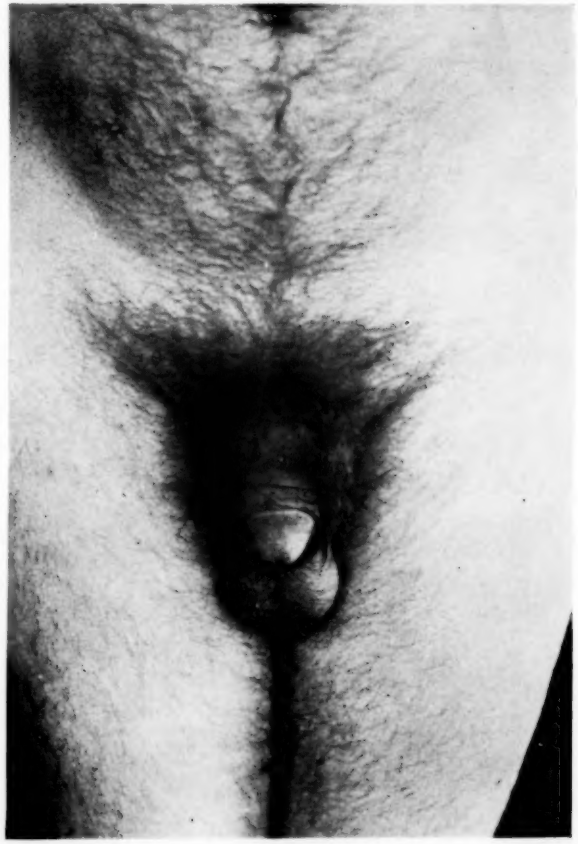

AFTER TREATMENT

what more tractable and less excitable, since the beginning of treatment. He now goes out with his mother and attends the various amusements, which had been previously impossible, due to his excited episodes. Whether or not the treatment had anything to do with this improvement is difficult to say.

Discussion

We have undoubtedly, in testosterone, a potent product which either resembles or represents the hormonal secretion of the male gonad. Its activity is manifested by the stimulation of secondary sex characteristics, as in the increased growth of body hair, particularly over the pubic area, abdomen, and occasionally the face. There generally results also an increase in the size of the external genitalia, with a concomitant stimulation of the libido. It is interesting to note, however, that in homosexuals this libido does not change its direction following treatment with testosterone; on the other hand, there results an increase in homosexual activity. This observation, if true, renews the dispute as to whether homosexuality is dependent upon psychological or organic factors. The tendency of an adequate supply of the active male hormone to increase the inversion may perhaps be interpreted as an indication of the correctness of the psychoanalytical view. This concept postulates that we are all bisexually constituted, and that the amount of gonadal hormone present in the blood merely determines the force of the libido, not its direction.

Summary

1. Seven psychotic male homosexual patients were treated with testosterone propionate.

2. All showed some stimulation of secondary sex characteristics, as well as an increase in libido.

3. There was no change in the direction of the libido, the result being an increase in homosexual activities.

4. There was little or no change in the mental condition.

5. These results would seem to favor the view that homosexuality is of psychic origin.

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Acknowledgement

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THE PREMARITAL INTERVIEW*

BY S. BERNARD WORTIS, M. D.

Psychiatrists who are genuinely interested in the problems of man and his personality soon learn that a pluralistic viewpoint is essential to any honest study of marriage and the sexual problems related to marriage. Too often, persons with a specific bias toward the physical or some single aspect of the psychologic or social sciences attempt to interpret the kaleidoscopic possibilities of marriage and fit them into a pet formula.

Any understanding of human sex biology demands consideration of all the three essential biologic integrative levels. These are: (1) the structural, (2) the physiologic and endocrinologic and (3) the psychologic and social aspects. The psychologic aspect must include sociologic, cultural and ethical factors and standards, which will of course vary with time, race characteristic and geographic location.

The writer does not intend to consider the structural or physiologic factors, since these have been adequately covered by the excellent work of Dickinson and the recent studies by the endocrinologists. Suffice it to say that much knowledge has come from physiologic studies in recent years, and it has been amazing to observe the emotional factors which appear modifiable by chemical substances. The sociologists and psychologists have contributed much to the study of marriage, for which the reader is referred to the recent work of Burgess and Terman.

In the psychological sphere, sexual activity must be considered intimately related to certain instinctual drives, emotional tone and behavior components. Many of these, of course, depend on factors of memory, imagination and social situation. Sensory perception plays a large part in sexual function through the medium of smell, touch, vision and hearing, and these factors are further enhanced by the imaginative process of fancies and daydreams. The standards of sexual behavior and knowledge vary with race and time. Although sensory perceptions and imaginations are important factors, these sexual standards are conditioned by the prevalent culture.

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It must be recognized that there may be substitutions for, or amplifications of, the sexual process in different individuals. Many religious and social developments are the result of such substitution reactions.

The studies of Freud have emphasized the psychologic stages of development in man and have shown that the child goes through a period of autoeroticism wherein he is concerned most with objects desired merely because they contribute to his own bodily comfort and satisfaction. This merges into a subsequent stage of object love in which the individual experiences desire for, or affection toward, some object or person in the environment. The beginning of object love is a most important stage, since on its success depends the possibility of a normal growth of the sexual instinct to full maturity. Moreover, this drive can be used to unfold many of the higher altruistic tendencies and motives. Reference is made here, of course, to the child's love for his mother or father or their substitutes (principally the mother, because she is more intimately concerned with the daily gratification of his desires). This tendency is moulded to the adult pattern of heterosexual adjustment, and there is no doubt that the normal affections of the child toward his parents are important dynamic points in the moulding of his capacity to make attachments later in life. It is easy to see why the young boy becomes attached to his mother and how this attachment may influence him later in life to choose someone for his wife who has many of the qualities possessed by his mother. The problem for the girl is more difficult. She must pass through an additional stage in her normal psychologic development. A period of affection for the mother must be succeeded by a transferral of the greater part of this affection to the father. It is easy to see why there may be difficulties in making this second step. There is reason to believe that the number of girls retaining an extraordinary degree of mother love in later years is greater than the number of boys attaining a corresponding degree of love for the father. This may, of course, be one factor accounting for the greater incidence of certain neurotic disturbances among women as compared with men.

It is unnecessary to enumerate the complications or various psychopathologic difficulties which may arise in human development,

because these are legion and to do so would not help to a better understanding of the problem of this symposium. It must be emphasized that today one must consider sexuality as a psychobiologically integrated function which transcends the merely structural, physiologic, sociologic, or psychologic sphere and has furthermore strong moral and aesthetic implications.

The purpose or function of sex and the procreative instincts is fully realized only in some form of family formation. This goal is not attained by all, but should be viewed as the *cultural sexual attainment* and clearly distinguished from the simpler forms of sexual satisfaction. It must nevertheless be realized that both partial and complete sexual achievement are important experiences. The family formation concept of sexual satisfaction must include courtship, marital life, impregnation, birth and the rearing of children. In our present-day culture, sex cannot be properly studied or adequately discussed unless one bears in mind the aforementioned concept of family formation as the culmination of sexual satisfaction. We must train our children to grow up prepared to satisfactorily and happily meet their sexual problems in terms of many possibilities. Some may successfully achieve a complete marital and family sexual adjustment. Some may have to be satisfied with incomplete periodic sexual episodes, and a very few may have to steel themselves to a whole life of continence with the capacity to subordinate or divert the sexual drive into other avenues of useful and pleasurable activity. There should be a clear understanding in the mind of the individual that each of these may represent a normal method of sexual adjustment and that in our present-day culture such adjustments are not to be considered in any way pathological. Undoubtedly, the complete adjustment is more easily capable of bearing maximal returns in happiness.

The marriage counsellor, in discussing sexual function, must emphasize several factors:

1. It may be necessary to overcome much intentional misinformation given under the guise of "protecting the child."

2. It must be emphasized that affection and sexual eroticism are capable of education along lines that will give personal and social satisfaction.

3. It should also be emphasized that there can be a conscious cultivation of a healthy maturing of one's sexual response.

4. It is important to stress that sex is only one of the many problems involved in the effort of the individual to achieve a harmonious social life. The physician is placed in a fortunate position to restore a sense of balance between pure pleasure-seeking and the eugenic urges of the individual. The physician must cultivate a sane view of individual differences and a wide tolerance of attitude.

With these points in mind, the premarital interview may concern itself with some of the data outlined below. It is better to permit the interview free direction, depending on the desires of the individual seeking information.

It is suggested that data be gathered upon the following:

1. Family background, habits, school, work, finances, religion, etc.
2. Attitude toward authority and the home situation.
3. Attitude toward sexual matters.
4. Personality of the client and the partner.
5. Information concerning the use of contraceptives.

This premarital consultation should be in the nature of a friendly interview. The physician must be careful not to give his patient the least suggestion that he is passing moral judgement on his or her life history material. The interview will be helped much if the physician does not press for answers but permits the material to come up spontaneously.

Some of the more important factors that may be investigated are the following:

1. The reasons for people wanting to marry. Many psychoneurotics feel that marriage is a panacea. Marriage is one of the highest forms of interpersonal relationship and is therefore a strenuous affair for many people.

2. Discussion of personality problems as the patient brings them up, especially if they are obviously factors that may lead to marital maladjustment. The factors may be discussed with the patient alone or, occasionally when necessary, in the presence of the partner, depending upon the subject and the desirability of airing such information.

3. The physician should attempt to estimate the patient's capacity to make an adult or parental adjustment.

4. Medical, and gynecological (or urological) examination should be made wherever indicated. In New York State, fortunately, a Wassermann test is required to be taken immediately before marriage. The mentally retarded should not be permitted to marry and have children.

5. Contraceptive information should be given if desired by the couple.

6. The physician should discuss with the couple some of the factors leading to preparation for an adequate and satisfactory sexual adjustment:

a. An understanding should be given of the nature, anatomy, physiology and psychology of the sexual life and the normal variations thereof.

b. In suitable cases, the woman may be instructed to begin manual stretching of the hymen in order to insure proper, nonpainful sexual experience as soon as possible after marriage. Occasionally, surgical opening of the hymen may be necessary.

c. Generally, it is wiser to advise that the client not disclose to the partner premarital experience with others, as it may later become a source of chronic dispute or unhappy comparison.

d. It is wise to explain to the couple that it often (but not always) takes months or a year or two for completely satisfactory sexual timing and orgasm to occur. The couple must recognize that such result can be obtained only by mutual adjustment. The husband must be advised that affection and gentleness are usually essential, especially during the couple's early experiences. Lack of orgasm on the part of the wife is not necessarily due to lack of affection. It should be managed understandingly by the husband. He should not have immediate recourse to glandular extracts, hypodermic injections or psychoanalysis. It has been the writer's observation that approximately only one-fourth of the women entering upon marriage experience orgasm regularly. This is a problem requiring mutual adjustment between husband and wife over an extended period of time.

e. The couple should understand that sexual play is beneficial if wisely practised. Manual stimulation is often a helpful and suit-

able sexual act. Young married couples will do well to learn something about each other's bodies.

f. The physician's judgement may be asked concerning sexual diversions. His attitude in this regard is best expressed by "Don't recommend them, but also don't condemn them." People's methods for obtaining sexual satisfaction vary. A mutually acceptable satisfaction-giving method is a good one, provided it does not offend the taste of the partner.

g. The physician may be asked his position toward premarital sexual experience. In this regard it is wise to point out the risks of premarital sexual experience without condemning or condoning it. More young couples these days are having premarital sexual experience and the writer believes that moral standards in this regard are not all-important so long as the man or woman does not contract venereal disease, severe anxiety, or guilt feelings following such experience.

h. There is no standard or "proper" sexual pace. It varies considerably. Most married couples, after the first year, have sexual relations about twice a week, but it should not be considered abnormal if they are held more, or less, frequently. This is an individual problem depending upon individual circumstances.

i. It is also important to indicate methods for the management of periods of continence.

7. The problem of the psychosexually maladjusted and the problems of management of homosexuality, impotence, dyspareunia and frigidity are best treated by the psychiatrist. Clients with such complaints require individual care over a prolonged period.

8. The attitude of the marriage counsellor is a most important factor. He or she must be a good listener and have no pet problems or ideas to work off on the patient. The counsellor must not adopt a coercive attitude. He must remember that there are no "laws" or dogma of sexual behavior and, above all, he must not frighten his patient. There is often real danger in recommending that the couple read sexual psychologic literature. Too often persons who read pathologic studies of sexual behavior identify fragments of their own behavior in such writings and secretly worry about themselves.

Perhaps the most important fact for the premarital advisor to recognize is that each problem is an individual one and must be so treated. Furthermore, one cannot overemphasize that, in this field especially, the patient's confidence in his physician is most important.

Marriage counselling is fundamentally important work, and should be carried out on a much wider scale. Most people coming to such clinics want general information; only a minority require special psychiatric help. This point is emphasized because it is the writer's belief that marriage counsel clinics are best organized outside psychiatric institutions under close supervision by psychiatrically-trained physicians. Too many people are afraid of the connotations of psychiatry and will not take advantage of the help that is available in such hospital-linked clinics. The psychiatrist may be called in for the more difficult personality problems, just as the gynecologist will be called on to help with the structural problems. Most of the routine work, however, can be carried out by the properly-trained physician, the properly-trained marriage counsellor, and the liberal and enlightened clergyman.

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PERSONALITY FACTORS IN ALCOHOLIC PSYCHOSES*

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In the schizophrenic and manic-depressive psychoses, much attention has been paid to the personality makeup of the patient. In diagnosing these cases, the importance of the personality organization was stressed particularly in regard to the prognosis. Some psychiatrists believe that the personality structure has no relation to the psychosis, but it is difficult to ignore the number of studies which show clearly that such relationship exists. The introvert makeup has for example, undoubtedly some bearing upon the schizophrenic psychosis, even though not all schizothymic individuals develop a schizophrenic psychosis. Worthy of mention is the work of August Hoch[1] in the United States and Hoffmann[2] in Germany who found that about 60 per cent of the schizophrenic patients had a schizoid constitutional makeup. Among the manic-depressive psychoses, the proportion of cyclothymic temperaments was even higher. Furthermore, as Hoffmann and others have shown, if schizoid traits are more pronounced in a psychotic individual with mixed introvert and extravert features, the outlook for recovery is poorer.

For some time little attention was paid in the organic psychoses to the personality makeup of the patient, presumably because the organic etiology was assumed to explain the psychosis. However, it is difficult to see how the different mental pictures found in an organic psychosis can be explained merely on the basis of the intensity or localization of the organic process with no consideration given to the personality of the patient. In recent years nearly all the textbooks mention that in the organic psychosis the makeup of the individual is important, but how and why this is important is not divulged. An exception is the paranoid form of organic psychosis, where it is agreed that an introverted personality makeup links these cases with schizophrenic reactions.

In a previous study on the traumatic psychoses, Davidoff[3] and the writer were impressed by the influence of personality makeup on the course and prognosis of that type of disorder. It was found

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that the ultimate outcome in introvert personalities was not as favorable as in extraverts, and that the schizoid individuals showed peculiar and significant features in their clinical picture. For instance, chronic hallucinatory and paranoid states developed almost exclusively in the introverted cases. Similar observations were made on general paretics. At the 1935 New York State hospital conference,[4] it was shown that the success of malaria treatment depended, among other factors, upon the previous makeup of the individual treated. The remission rate in schizoid cases was much lower than that of the nonschizoids, while chronic hallucinatory and paranoid pictures were by far more frequently seen among introverted paretics. Kusch[5] found, in the malaria-treated general paretics in the Manhattan State Hospital, that the schizophrenic type of general paresis had a much less favorable prognosis than the other types. This observer showed that even though they improved in many other respects, patients of this type retained their hallucinations and delusions with paranoid content. In a recent study by Pollack[6] at the Rochester State Hospital, it was shown that the majority of the chronic paretics who remained in the hospital at least two years after adequate treatment according to present methods showed a preponderance of schizophrenic reaction types. It was also noted that the majority of these manifested a schizophrenic trend at the time of admission.

The writer is aware that the grouping of patients as extravert and introvert is conducive to rather broad classification. However, the meaning of these terms is well established and widely used clinically in descriptions of personality. These simple classifications naturally do not explain in detail the personality structure of the patient, but are sufficient to show the predominant attitude of the individual in meeting life situations. There are undoubtedly endless variations of personality in the introvert and extravert groups, but innumerable variations occur also in schizophrenia, manic-depressive psychosis and paresis. If one considers the details of the so-called functional psychoses and of the personality makeup, he is tempted to say that no one case is similar to another. A classification can be made only if certain details are overlooked, with the end in mind of grouping together cases which show marked similarities. It is believed by the writer that the

terms "introvert" and "extravert" are about as accurate as "schizophrenia" or "manic-depressive psychosis."

Since the problem of alcoholic psychosis is of practical importance, the number of such cases being not infrequent, the writer wished to compare observations of his own with those previously made on the subject. With this in view, the records of 200 successive cases of alcoholic psychosis admitted to the Manhattan State Hospital during 1933-1934 were selected and studied. Most of them came under personal observation at one time or another. The observations were made on psychotic patients in which the severity and duration of the psychosis was sufficiently established. Each patient had at least three months residence in the hospital and was followed for one year after leaving the institution. Alcoholics without psychosis and alcoholic patients with only short psychotic episodes were not included.

In reviewing the personality of the individuals diagnosed "alcoholic psychosis," the following facts were observed, illustrated in Table 1. The overwhelming preponderance in the alcoholic psychosis of the extravert type over the introvert type is clearly seen. Of the 200 patients, 145 (72.5 per cent) were predominantly extraverted, while 55 (27.5 per cent) were predominantly introverted, a ratio of nearly 3 to 1. It is interesting to study the outcome of these cases. Of the extravert type, 114 (78.3 per cent) recovered while only 31 (21.7 per cent) remained unimproved. On the other hand, of those with introverted personality only 23.6 per cent recovered and 76.4 per cent remained unimproved. Here is seen a startling reversal of the previous numerical ratio. This parallels the observations made in traumatic and paretic patients, and confirms the impression that in the alcoholic psychoses the prognosis for the introverted personality is generally much less favorable than in the extraverted, in the ratio of 3 to 1.

TABLE 1

Alcoholic Psychoses—200 Cases

Introvert—55—(27.5 per cent)		Extravert—145—(72.5 per cent)
Recovered	13—(23.6 per cent)	114—(78.3 per cent)
Unimproved	42—(76.4 per cent)	31—(21.7 per cent)

TABLE 2

	Delirium and Confusion—96 Cases	
	Introvert—11	Extravert—85
Recovered	4	73
Unimproved	7	12
	Delirium Tremens—24 Cases	
	Introvert—3	Extravert—21
Recovered	0	19
Unimproved	3	2
	Korsakow's Psychosis—17 Cases	
	Introvert—7	Extravert—10
Recovered	3	9
Unimproved	4	1
	Acute Hallucinosis—43 Cases	
	Introvert—26	Extravert—17
Recovered	6	11
Unimproved	20	6
	Chronic Hallucinosis—2 cases	
	Introvert—2	Extravert—0
Recovered	0	0
Unimproved	2	0
	Paranoid Trend—10 Cases	
	Introvert—8	Extravert—2
Recovered	0	1
Unimproved	8	1
	Alcoholic Deterioration—6 Cases	
	Introvert—2	Extravert—4
Recovered	0	0
Unimproved	2	4

Other observations concerning the various types of alcoholic psychosis and their respective prognosis were studied and are indicated in Table 2. The diagnoses of the 200 cases were as follows: confusion—96, delirium tremens—24, Korsakow's psychosis—17, acute hallucinosis—43, chronic hallucinosis—2, with paranoid trend —10, with uncomplicated emotional instability—2, with alcoholic deterioration—6. On further examination it is found that in the group designated "confusion," out of 96 cases 85 were of the extravert makeup and only 11 were predominantly introverted. Of these 85 extraverts a large number (73) recovered, while a relatively small number (12) remained unimproved. Of the intro-

verted group only 4 recovered, while 7 remained unimproved. It is important to note that recovery in the extraverted cases required a shorter time and was more clear-cut than that in the introverted cases. In the latter, the process of recovery was slow; often some slight defect remained similar to the "scarring" in schizophrenics. In the delirium tremens group numbering 24, 21 were of the extravert and 3 of the introvert type. Nineteen recovered, but without exception these were of the extravert type. Only 2 extraverts remained unimproved. All 3 of the introvert cases remained psychotic. Among the 17 Korsakow cases, there were 7 introvert and 10 extravert individuals. Of the extraverts 9 recovered, and of the introverts only 3. Of those unimproved there remained 1 extravert and 4 introverts.

Analysis of the acute hallucinosis group revealed the rather striking fact that of the 43 patients, the majority were of schizoid makeup. Twenty of them remained unimproved and but 6 recovered. The syntoid types of this group numbered 17, of which 11 recovered, only 6 remaining unimproved. In the chronic hallucinosis group 2 patients remained unimproved, both introverts. Of the 10 individuals classified under alcoholic psychosis with paranoid trend, 8 were introverted and 2 extraverted. Of these 1, an extravert, recovered. The rest remained unimproved. Of the 6 cases of alcoholic deterioration, there were 4 extraverts and 2 introverts. As was to be expected, all these cases remained unimproved. An analysis of Table 2 shows that in the cases of alcoholic confusion, delirium tremens and Korsakow's psychosis there was a large preponderance of extraverts. On the other hand, in the classifications of acute hallucinosis, chronic hallucinosis and paranoid trends, this ratio was reversed. Individuals with these types of alcoholic disorders are predominantly introverted. Of the 55 introverts in the 200 cases, almost half (26) were found in the acute hallucinosis, and 8 in the paranoid group.

In the material here cited the introverted patients had not only a different prognosis, but to a large extent a different clinical picture when contrasted with the extravert type. Often these individuals would show at the onset a typical picture of alcoholic confusion or delirium characterized by disorientation, memory defects, anxiety affect, auditory and visual hallucinations and para-

noid ideas. If they displayed this clinical picture at the beginning, their cases were indistinguishable from those of other alcoholic psychoses. When improvement set in, however, the course of the psychosis presented considerable difference from that seen in the extraverted alcoholics. These introverted patients became clearer, well oriented, and no longer displayed memory defects. However, they retained their paranoid delusions and predominantly auditory hallucinations. In the extravert type the mental improvement is a harmonious or, one might say, an integrated one. The different psychotic manifestations disappear more simultaneously. Usually the hallucinations and delusions are first to go; later the memory impairment is restored. In the introverted patients the psychotic improvement is a disharmonious one, restricting itself mainly to mnestic orientative functions, while the delusions and hallucinations persist. Some of these patients recover after a prolonged course. Others, however, become so-called cases of chronic hallucinosis.

Another group of introverted patients have from the beginning a clearer sensorium and little impairment of memory. The principal psychotic manifestations are auditory hallucinations, paranoid ideas, and frequently an anxious affective state. Undoubtedly, some of these patients recover. Most of those here studied had a rather prolonged course. Many ended in a chronic hallucinatory state, or even many who recovered showed some suspiciousness and rigidity in affect, as with patients recovering from schizophrenic episodes. The writer believes that pictures of alcoholic hallucinosis with paranoid trend and a clear sensorium on one hand, and a disharmonious recovery from the psychosis on the other, are of bad prognostic import. Investigations of the facets of the personality of these patients will often show an introverted makeup.

It is difficult to say how such types of alcoholic psychosis should be grouped. Lewis[7] observes that the combination of alcoholism with schizophrenia constitutes a most interesting group of cases, and that such individuals are continually coming up for differential diagnosis. He feels that many of these schizophrenics were listed under alcoholic psychosis merely for the reason that they had been drinking heavily previous to their immediate breakdown. If one

gives careful attention to the cause of this, it could be readily shown that they had been drinking to fortify themselves from feelings of uneasiness and "nervousness." Lewis further states that as a general rule these persons exaggerate the importance of alcohol in their disorders, while true alcoholics minimize it. Many psychiatrists believe that the organic brain disease presented in alcoholic psychosis occurs in a type of individual fundamentally schizoid, the mental disintegration and aberration having been precipitated by the somatic disease process. Similarly, this is seen in chronic encephalitis lethargica and in certain infectious exhaustion psychoses: when the initial fever or deliroid confusion disappears, many pass into a true schizophrenic state, while others recover from their mental symptoms along with the cure of the toxemia. Other psychiatrists believe that there are only two true alcoholic intoxication psychoses, the delirium tremens and the Korsakow syndrome. They believe paranoid trends and cases of acute alcoholic hallucinosis to be basically types of schizophrenic mental disorder, exaggerated or complicated by alcoholic overindulgence. Lewis further notes that the differential diagnosis of these types naturally depends in great part upon the training, attitude and prejudices of the examining psychiatrists. He emphasizes the lack of established criteria of a completely objective nature which can be utilized by all for diagnostic purposes.

In this short presentation, it is not the writer's intention to treat the complicated problem of the differential diagnosis of organic psychoses and schizophrenia or the interrelationship of these disorders. It is his belief that followup studies will clearly show the dynamic role played by the introverted makeup in the organic psychoses. Whether they are grouped as schizophrenic or organic reactions will depend upon the opinion of the individual clinician. The essential point is that these cases be recognized and classified in a special group among the organic psychoses, effort being made to understand how a specific constitutional makeup produces a different clinical picture and a different prognosis. This question is obviously not only of theoretical but of practical importance as well. The treatment of all alcoholic psychoses, especially in institutions, where individualization of treatment is difficult, is much the same. Seemingly, this treatment of alcoholic psychosis in the

introverted types is insufficient. It is possible that these patients need more psychotherapeutic attention than others showing a stronger tendency to recovery. Furthermore, it will probably be necessary to combine their general treatment with insulin or metrazol therapy, the former directed against the organic alcoholic manifestations, the latter against the schizophrenic component.

It is, of course, difficult to say how this introverted personality makeup influences the clinical picture and the prognosis of organic psychoses. Speculations are always dangerous and should be supported by statistics based on careful observation, together with the clearest present knowledge of schizophrenic psychoses. It can be assumed, however, that the constitutional makeup of these introverted individuals is such that their recuperative power is less than that of the nonintroverted types. Mental and physical asthenia is a feature often observed in introverted individuals. Perhaps the metabolic organization reflected in the function of their vegetative nervous system is not as resistant to organic noxae. Almost all schools of psychiatric thought believe that something is lacking in the adaptative power of these individuals, some emphasizing the somatic, others the psychic aspect. From a psychological point of view, it seems probable that shy, daydreaming individuals accustomed to forming fixations and resorting to escape mechanisms would tend to remain in a psychotic state without resuming contact with reality.

In this study, an attempt was made to show the importance of the prepsychotic personality in the prognostic evaluation. The writer is aware that 200 cases constitute a small number, but similar observations on posttraumatic and paretic cases confirm the view that personality is important in the organic psychoses.

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THERAPEUTIC PROBLEMS IN THE ALCOHOLIC PSYCHOSES*

BY C. E. HOWARD, M. D., AND H. M. HURDUM, M. D.

It is of some historical interest to note that, prior to its opening in 1881 as a State institution for the mentally ill, the physical structure of the Binghamton State Hospital comprised the New York State Inebriate Asylum, a private institution devoted solely to the treatment and rehabilitation of alcoholic patients.

The report of the superintendent[1] dated December 31, 1868 provides some items of general and statistical interest. It states that the average period of treatment was 96 days, many remaining voluntarily six months and some a year. During this period, 228 patients were discharged, of whom 113, or approximately 50 per cent, were considered "permanently reformed after a single probationary trial." Quoting further, "eleven have fallen after a first trial and four after a second but returning and clinging to the asylum, these likewise have triumphed in the end."

Twenty-five of this group were set down as "failures and incorrigibles." Of the remainder of the group, no information was available following discharge concerning the permanence of the cure.

With regard to treatment, the report states, "we propose by positive aid and comfort, and confiding appeals to his reason, his affections and his aspirations, to restore him to himself, his family and society."

Concerning prognosis, the superintendent expresses himself as follows: "we find his prospect of reform improving as he grows older and suffers more acutely—as his nerves become weaker, and his remorses keener, and his once plucky constitution begins to show signs of giving in. Between the ages of 35 and 45 his chances are decidedly better than when he is younger and more reckless, or older and more shaky. The moral advantage, the chance of lifelong abstinence, is decidedly with the married and the marriage being happy, for I need hardly say that there is no more potent, nor comparatively more common provocative to reckless debauchery than an ill-assorted, incompatible, wrangling marriage; nor any such incentive and inspiration to reform, any such support and

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cheer in the struggle of self-denial and self-control, any such source of fortitude and hope in the hour of temptation, as the devotion of a forgiving, faithful, patient wife, clinging fast to the wreck, that the crew of selfish kindred and friends have abandoned."

From this historical reference, the writers wish to pass without comment to the subject matter of the present paper.

Any discussion of the therapeutic problem in the alcoholic psychoses at once involves a number of factors among which are: (1) the types of cases presenting themselves for treatment, (2) the period of time during which they are available for treatment, i. e., the period of hospital residence, and (3) the choice of treatment, which in turn is dependent upon the facilities available (physical equipment and personnel).

In considering these factors, the writers made a survey of the admissions of alcoholics to the Binghamton State Hospital during the 10-year period January 1, 1929-December 31, 1938. During this period, 250 patients were received, 5.2 per cent of the total admission rate. This compares with an admission rate for the preceding decade of 4.6 per cent for the Binghamton State Hospital[2] and a rate of 6.5 per cent for all New York civil State hospitals for the 20-year period 1909-1928 as prepared by Pollock.[3]

In the Binghamton series, the 10-year period considered divides itself into five years under prohibition and five years subsequent to repeal. It is of interest to note that the number of patients admitted during the latter period marked an increase of 29.3 per cent.

Of the 250 patients admitted, there were 231 men and 19 women. During this period there were 70 readmissions, of which 51 had had two admissions, 12—three, 5—four, 1—six, and 1—seven.

As for types of admission, 91 were received on health officer's certificate (of which 40 were later committed), 43 on voluntary application, and 116 by regular commitment.

The following table presents the significant data concerning admissions and stay for the various groups here considered:

From this table, it is apparent that those individuals diagnosed acute hallucinosis or "other types" make the quickest clinical recovery. However, study of the number of readmitted patients shows that this group has the greatest tendency to relapse. Clini-

cal recovery is usually rapid but is seldom accompanied by insight into the mechanisms and underlying factors involved. This raises the question whether patients in this group should be detained in the hospital for detailed analytical study.

Psychiatric classification	First admissions	Readmissions	Per cent of total	Average stay in hospital (days)
Alcoholic deterioration	36	10	18.4	222
Acute hallucinosis	70	25	38	74
Alcoholic confusion	25	12	14.8	180
Korsakow's psychosis	13	4	6.8	300
Paranoid reaction	10	4	5.6	467
Delirium tremens	7	3	4	212
*Other types	15	7	8.8	100
Without psychosis	7	2	3.6	38
Average stay (among all patients), 160.8 days.				

*Episodes of excitement, depression, pathological intoxication. etc.

In the opinion of the writers, formal analysis in alcoholic psychoses is not practical in State hospitals because of factors peculiar to this type of mental illness, namely that the great majority of such patients are of cyclothymic temperament; in such individuals, clinical recovery is usually associated with a feeling of physical well-being and a desire (often prompted by economic necessity) to resume their previous social status at the earliest possible opportunity. In many instances, pressure is brought to bear by indulgent mothers and forgiving wives to secure the patient's discharge. This occurs particularly in the case of patients admitted on health officer's certificate or on voluntary status, so that the hospital frequently cannot detain the patient beyond the period necessary for a purely clinical recovery. In the series here discussed, 29.2 per cent of the patients remained in the hospital 30 days or less; in the acute hallucinosis group, this figure was 40 per cent. Forty-nine and two-tenths per cent of all the patients were in the hospital less than 90 days.

The lack of personnel trained in analytical technique, as well as of time available for such procedure even in cases where satisfactory patients could be detained in the hospital, militates against such a therapeutic approach. In this regard, Knight of the Menninger Clinic states in his recent paper that he devoted 2,000 hours

of analysis to his group of 20 patients, one patient receiving 470 hours of treatment. A private clinic with reimbursing patients lends itself more readily to this type of treatment than State hospitals, where economic factors must be considered from the standpoint of the patient and his family, together with the cost of such treatment to the State.

It is apparent, therefore, that some modified form of psychotherapy must be utilized, for one can by no means ignore the social, economic and psychic factors which contribute to or precipitate excessive alcoholic indulgence.

The function of the State hospital is to rehabilitate the patient in the shortest possible time. This involves first the immediate evaluation of his physical being, followed by the instigation of individualized medical treatment directed toward relief of the presenting symptoms. By individualized treatment, the writers mean that mere routine therapy is to be avoided as far as is possible with the facilities available. The acute alcoholic is ill physically and mentally, and the treatment of choice in each case warrants careful consideration with respect to several factors, such as diet, sedation, elimination, and supportive measures. Accordingly, the writers do not propose to offer a brief for any particular form of medical treatment in the acute phase, but rather to present a summary of the current literature on the subject.

The medical management of acute alcoholism is of greatest importance in delirium tremens, Korsakow's psychosis, alcoholic confusion, occasional extremely excited cases of acute hallucinosis, and certain complications which arise during the course of these reaction types. Less compelling physical problems are ordinarily encountered in the majority of cases of acute hallucinosis, alcoholic deterioration, paranoid reactions, and chronic alcoholism without psychosis. Conservatively, it may be stated that less than half the cases present serious symptoms from the standpoint of toxic changes and deficiency effects upon the nervous tissues, liver, alimentary tract or circulatory system. However, all patients exhibit some physiological deviations requiring careful medical attention during the first few days or weeks of hospitalization. Even the milder cases suffer insomnia, anorexia, weakness, tremulousness, undernourishment, varying degree of alimentary dysfunction and

vitamin deficiency. In general, the measures necessary for the most seriously ill must be employed to some extent in the less toxic cases to insure optimal results.

It is essential that no alcohol be given the patient from the time of admission. Diethelm[5] stresses the psychological importance of immediate withdrawal and continuance of the treatment with complete abstinence from alcohol, contending that there are no withdrawal symptoms or danger of intensifying the delirium. Piker, Philip and Cohn[6] emphasize this method, which they employed in the treatment of 300 cases of delirium tremens with a resultant crude mortality of 5.3 per cent and an average stay in the Cincinnati General Hospital of 4.8 days.

Absolute bed rest is ordered throughout the phase of confusion or excitement and until several days after pulse and temperature are normal, in order to conserve energy and safeguard the myocardium. This must be accomplished with a minimum of sedation. Close observation is required on the part of the ward personnel, so the patient may have a minimal chance of injury to himself or others. In the writers' experience, paraldehyde in small doses three or four times a day is the most satisfactory drug to quiet the patient during the first few days; however, this should soon be discontinued. As early as is feasible, hydrotherapy should be substituted for drugs, with the use of warm packs and neutral baths of from one to two hours duration. Parental hypnotic drugs should be limited to exceptional cases in which oral administration is impossible. In some instances, sedatives and cathartics may be administered in tube feedings.

The advisability of eliminative procedures is definitely indicated. Extract of cascara grs. 10 on admission, and magnesium sulphate 1 ounce each morning for three days, is a proper dosage. Alkalis in palatable drinks, and fluids as tolerated, are important in combating the acidosis and dehydration which are frequently in evidence. Mild diaphoresis should be encouraged by the use of lukewarm body packs and, when the patient becomes ambulatory, of electric cabinet baths followed by general massage or stimulative baths.

Spinal fluid drainage has been recommended in the acute delirium by Goldsmith,[7] who found it most efficacious when begun within

24 hours after admission. He states that the removal of 40 to 50 c.c. of fluid resulted in 80 per cent of the cases showing a recession of acute mental symptoms within a week. Cowles[8] stresses the importance of repeated spinal taps with slow removal of the fluid, on the assumption of edema of the brain together with the clinical finding of temporary cessation of delirium following successive spinal taps. It is his belief that "these long established edemas, untreated, account for the alcoholic dementias so common in later life." The practice of the writers is to repeat spinal drainage at intervals of hours or days, depending upon indications, until no elevation of spinal fluid pressure recurs. Piker[6] and others have found this measure important in delirium tremens. They also favor 50 per cent dextrose intravenously from two to four times daily.

Various supportive measures are frequently advisable and are sometimes of life-saving character. Evidence of myocardial weakness or of cardiac decompensation require digitalization. Caffeine sodium benzoate grs. 7½ hypodermically may be given every four hours for a few doses. The latter drug also decreases cerebral congestion and edema. For this condition, it is probably also wiser to use hypertonic sucrose, rather than dextrose, to avoid the secondary rise in spinal fluid pressure incident to diffusion of dextrose into the spinal fluid. The writers do not consider digitalization useful unless there is definite evidence of cardiac pathology. In nephritic edema with ascites, salyrgan may be cautiously employed in small doses if no improvement follows administration of milder diuretics. One of the most serious complications is recurrent circulatory failure resulting from rapid loss of blood plasma into the tissues. Frequent use of intravenous saline and glucose, acacia or blood transfusions may be of no avail. Continuous intravenous infusion may be successful in some cases. Frequent blood pressure readings are necessary in a crisis of this type.

Certain patients during the early convalescent period are benefited by the hypodermic administration of apomorphine. Unless it is certain that the physical condition is at least fair, it is wise to give grs. 1/20 as an initial dose, then if no untoward symptoms arise grs.1/10 three times a week for two or three weeks. Beside a definite tonic effect upon the stomach and intestinal tract, there

is, in certain cases, a definite psychological effect, so that this procedure is accordingly referred to as a "contraconditioning type of therapy." Fleming[9] attributes some benefit thereto in three cases which he reports. On the basis of a small series of cases treated in this way, the writers are of the opinion that the method is worthy of trial only in the sensitive, neurotic type or the mildly defective individual who may be unusually suggestible. Its application to patients who are deteriorated or of long-standing addiction is futile.

Diet is of the most vital consideration in the treatment of the early phase of the psychosis. A high caloric intake must be insured with special attention to the adequate correction of vitamin deficiency. This precept has for some time been universally accepted. Steck[10] points out that in the treatment of delirium tremens, the food should provide large amounts of carbohydrates but should be deficient in fats and proteins. He recommends insulin in five to ten-unit doses in the mornings to be repeated in an hour; after another hour 60 gms. of sugar should be given diluted in water or coffee. Large quantities of coffee, milk, tea and fruit juices must be given. If necessary, tube feedings and parenteral injections may be resorted to in order to supply adequate fluids, chlorides, carbohydrates and vitamins. The diet must always be high in vitamin content and therefore include fruit, tomatoes, green vegetables and brewer's yeast. Wexberg[11] emphasizes that the use of small doses of insulin in these cases bears no direct relationship to insulin shock therapy. In the nature of a rationale, he states: "It is on the same line as the sometimes successful insulinization of patients suffering from gastric crises in tabes, the vegetative condition of intense hunger being strictly antagonistic to that of nausea and vomiting typical of gastric crisis." Because insulin plays an important part in the maintenance of the glycogenic reserves, Puyelo[12] believes it is one of the most important therapeutic agents in the treatment of chronic alcoholism, especially in cases of delirium tremens. He favors 5 to 20 units of insulin combined with the intravenous injection of 20 to 50 c.c. of glucosated serum. The need is for rapid restitution of hepatic functions in carbohydrate metabolism and detoxification.

Vitamin B deficiency is of common occurrence in the alcoholic psychoses. Sherwood[13] has shown that the B-avitaminosis is the result of decreased intake rather than of decreased absorption. He states that it "occurs most often in patients with chronic alcoholism, in patients on a smooth diet, on a so-called reducing diet, on an allergic diet and on a low cost restaurant diet." Regarding the physiology of vitamin B, he adds: "Its use is apparently to complete the combusion of carbohydrate in the body. When B is absent, glucose and carbohydrates in general are incompletely burned, the end products being lactic and pyruvic acids. From two to four weeks of absolute deprivation will result in a virtual absence of B from all the tissues of the body. Further, the vitamin being water soluble, any therapy that gives rise to diuresis, such as intravenous saline, will decrease the amount of vitamin in the body, it being mechanically washed out in the urine. Lack of vitamin B causes decrease in the contractility of the heart. This results in a cardiac enlargement and eventually cardiac failure. The pathology is an edema of the muscle fibers of the heart." Clinically, there is no doubt that minor and severe grades of vitamin B deficiency are of common occurrence. In considering these, the cardinal symptoms are listed by Sherwood as follows: (1) anorexia; (2)constipation; (3) a slight pitting edema; (4) tachycardia and poor response of the heart to effort, a late symptom; (5) paresthesias and (6) motor defects with loss of deep reflexes, paralysis and atrophy. The ordinary individual need for vitamin B varies from 200 to 300 international units per day. Jolliffe, Norman, Colbert and Joffe[14] estimate the dosage for prevention of polyneuritis in the alcoholic as a full mixed diet, supplemented by about 25 international units of vitamin B for each 100 calories of alcohol consumed.

Sheldon[15] states that the pathology in polyneuritis consists of "degeneration of the peripheral nerves, and anterior horn cells, and petechial hemorrhages in the brain, spinal cord and serous membranes." In cases of vomiting and nausea, he recommends withholding food for a short time and giving glucose and saline with daily intramuscular liver extract. Heiman[16] has aptly called attention to the reciprocal dependency of gastric secretion and vitamin B supply, as well as to the high carbohydrate value of

alcohol placing an impossible demand upon the alcoholic of the lower financial levels, who is hardly able to cover a normal vitamin need, to say nothing of the increased demand of the persistent ingestion of alcohol. In this connection, Murphy[17] reminds us that absorption of vitamin B is reduced in cases of achlorhydria, parenteral administration becoming highly advisable. However, if there is adequate stomach acid, the vitamins would better be administered by mouth, not only for the great economic saving but as an education of the patient regarding what type of diet fully insures a proper vitamin intake.

Goodhart, Robert and Jolliffe,[18] working with varying doses of vitamin B on four groups of polyneuritic cases, concluded that in moderately severe cases at least four times the usual dose should be used for quickest results, but that more than that is probably of no advantage. They conclude that failure to respond results from irreversible degenerative changes. Sciclounoff, and Broccard[19] report on seven cases ranging from polyneuritic pains to Korsakow's syndrome, stating that five cases recovered, two cases were improved, the average duration of treatment being 20 days.

In occasional individuals, varying degrees of pellagra are manifested. In 1934, Zimmerman, Cohen and Gilden[20] reported three cases of true pellagra with characteristic skin changes which they attributed to the avitaminosis resulting from chronic alcoholic neglect of diet. Since that time, many cases have been collected and have been found during the past year to yield to treatment by nicotinic acid, another component of the vitamin B complex. It is conceivable that there are still other important vitamin deficiencies not yet clinically demonstrated. This is a further argument in favor of supplying alcoholic patients with excess amounts of all vitamins, preferably from the original food sources. Spies and DeWolf[21] found that 90 per cent of cases of pellagra occurring in the north developed after severe alcoholism.

Recent clinical experiments have been conducted to test the efficacy of benzedrine sulphate in the treatment of chronic alcoholism. Reifenstein and Davidoff[22] report the use of this drug in a series of alcoholic psychoses at the Syracuse Psychopathic Hospital. They used 10 to 30 mgm. daily, usually given orally but used intravenously in some cases. Some of the patients commented that

the sensation produced was similar to a mild state of alcoholic intoxication. The authors state that most favorable results were noted in mild states of depression following drinking debauches, pathologic intoxication, delirium tremens and early cases of acute hallucinosis. They emphasize that it appeared to be of value only in psychoses of recent onset in which organic defects of the sensorium, personality alterations or deterioration had not developed. They warn against the use of the drug outside hospital supervision, "because of danger of addiction, because of the relatively frequent and unpredictable occurrence of untoward effects and because of the occasional appearance of serious toxic reactions."

Bloomberg[23] of Harvard Medical School reported in January, 1940 on the treatment of 21 unselected cases of ambulatory type by the use of benzedrine sulphate. He regarded results as reasonably successful in 14 cases, with only 4 complete failures. The period of abstinence varied from two weeks to 13 months. Eight of the 21 patients remained abstinent from the beginning of the treatment. Bloomberg predicts that this method may find its greatest value in providing abstinent intervals which may be utilized for the institution of more fundamental psychotherapeutic approaches.

From this cross-section of the current literature, it is apparent that a variety of therapeutic approaches is available for the treatment of the acute phase, each method having some merit; however, none can be safely and effectively applied in all cases. The writers again wish to point out that a careful evaluation should be made of all factors in each case and that best results are obtained in a selective, individualized therapeutic program.

In conjunction with this physical approach, the writers feel that the facilities of the occupational therapy and recreational departments of the hospital should be freely utilized. As soon as his condition permits, the patient should be occupied and his interests stimulated. Physical exercise, supervised games and social activities are valuable therapeutic adjuncts. Patients will frequently develop hobbies and interests which enable them to tolerate and accept more cheerfully the hospital environment. These interests provide a form of substitutive therapy, which they may continue even after leaving the institution.

Complete therapy involves not only clinical recovery from the symptoms which led to the patient's admission, but also a thorough evaluation insofar as is possible of the factors which have contributed to the alcoholism. This requires a long-range study of the patient from the standpoint of his life experience. The examination should take account of the social, economic and emotional factors, for if the patient is not helped to understand or modify these, normal adjustment may be impossible.

As has previously been mentioned, a psychotherapeutic approach to the patient's conflicts must of necessity be modified in State hospital practice; nevertheless, much can be done. A careful history is essential. This should give a complete picture of the patient's background (his social and emotional life) and should be obtained not only from the relatives but from the patient himself, for often the psychiatrist is called upon to treat not only the patient but his whole family. The anamnesis will frequently need to be supplemented by neighborhood investigation and the utilization of such sources of data as talks with employers.

For obvious reasons, psychotherapy should not be attempted until a clinical recovery is well established. However, considerable information can be obtained by careful observation of the patient's behavior and mood, the nature of hallucinations, and spontaneous productions during the acute phase. Armed then with as much informative material as possible, the psychiatrist is ready for a direct approach to the psychogenic factors. Here again the writers do not propose to suggest a psychotherapeutic program, as this must be modified to meet the individual case and will be dependent upon such factors as type of psychosis and extent of organic defect or deterioration. The authors believe, however, that little is to be gained, transference often being impaired, by any tendency on the part of the physician to "talk down to" the patient, i. e., to be condescending, or to be hypercritical of his faults and habits. On the other hand, neither is a definitely casual or jocular attitude to be recommended. It is essential that complete abstinence be advised to the patient. Accordingly it is advisable that the therapist himself abstain, lest his acts or attitude seem to imply "you must not drink, but it is all right for me to do so as I am a superior person."

Assuming then that the patient has recovered from his psychosis, has recuperated physically and has been given such psychotherapeutic consideration as has been feasible, there remains a final step in the program of rehabilitation, that of his social and economic reestablishment. As has been previously stated, not only the patient but also his family, requires treatment. Particularly is this true when the patient's parole or discharge is to be considered. The family should be prepared psychologically for his return home. Marital problems, sexual maladjustments, parental fixations, "in-law" situations—all these require consideration and treatment if possible. Talks just prior to discharge with the patient and his wife together may promote a better mutual understanding of the factors involved. It is essential that such talks be of a constructive, advisory nature, avoiding critical judgement of one in the presence of the other. With regard to family and marital problems, the proper attitude is that of conciliation and mediation.

The authors feel that the patient's economic status warrants especial consideration, as it was found by them that many patients relapsed because they were unable to find employment: the resulting idleness, together with a feeling of discouragement, rendered them susceptible to a resumption of their alcoholic habits. For this reason, the writers consider it important that the patient have remunerative employment waiting for him when he leaves the hospital. Failing this, he should be registered with an employment agency and have arrangements made with the local welfare bureaus for assistance to himself and his family. Occasionally where the family finances have been reasonably adequate but poorly handled, advice relating to the preparation of a budget has seemed worthwhile.

In instances where patients exhibit some degree of religious interest, they should be encouraged to renew their contact with the church.

In arranging such details, the social service department of the hospital can render valuable assistance and careful followup during the parole period. Encouraging talks by the outpatient clinic physician also may assist the patient in his readjustment.

It is felt, therefore, that while the psychogenic factors in exces-

sive alcoholic indulgence are important, equally so are the practical details of everyday life and living, for often these factors are the only ones properly appreciated by the patient and his family.

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A BRIEF REVIEW OF THE RESEARCH AND TEACHING FUNCTIONS OF THE NEW YORK STATE PSYCHIATRIC INSTITUTE AND HOSPITAL FOR THE TEN YEAR PERIOD 1930-1940

BY NOLAN D. C. LEWIS, M. D.

The investigations carried out at the Institute during the past ten years have embraced many fields of activity. It is thus a difficult task even to arrange these studies comprehensively in terms of the specific mental disorders, while to evaluate their significance properly is virtually impossible. Final pronouncements, of course, are not yet in order. Owing to the limitations of time and space, the writer refrains from extensively summarizing individual studies or referring to the varied personal accomplishments of members of the staff. Attempt will be made to indicate the nature of certain investigations and some of the most important conclusions reached.

In general, the activities have been concentrated at those points in the field of psychiatry where it might be possible to throw light on the causes of mental disorders, their cure and prevention. These attempts have included investigations into the physical components of mental diseases; into changes in the central nervous system that are associated with, or may form the substratum of, psychoses; into metabolic and other chemical processes in the normal and diseased brain and body; into behavior patterns; into hereditary factors and familial disorders; and into the relation of mental function and disorder to all varieties of possible external influences. In support of such studies and for future utilization, collections of anatomical material and a vast amount of clinical material, observations and records have been gathered over the years. They will all be put to scientific use eventually, and will be invaluable for purposes of instruction.

The main interests, so far as specific mental disorders are concerned, have centered chiefly upon general paresis, schizophrenia, manic-depressive psychosis, psychoneurosis, mental deficiency, and behavior problems in children. A number of these researches have enlisted the combined efforts of several departments within the Institute, while others have been limited to certain highly special-

ized disciplines and methods available in chemistry, neuropathology, experimental psychology, biochemistry, and other fields.

The Psychiatric Institute was one of the initiators in the United States of hyperpyrexia and long-term treatment of general paresis by various methods. It was the first to institute the treatment of general paresis by electropyrexia utilizing the radiotherm. Other forms of hyperpyrexia treatment (including malaria) were utilized, and systematic studies of the long-term effects of this treatment and of tryparsamide therapy were made. It is felt that these studies, now known generally to everyone, formed an important contribution, not only from a scientific but also from an economic standpoint, to the problem of State care and treatment of general paretics. An accurate estimate of the savings made by the State as a result of the specific contributions of the Psychiatric Institute in this field would be difficult to draw up, but they are believed to be considerable. In the problem of paresis, the Institute investigated a series of therapeutic methods on a rather small group of patients, but with intensity and efficiency. Furthermore, several other items of scientific importance resulted as extensions of this study.

The research on the strains of malaria for the treatment of general paresis, begun at Ward's Island, was continued; it was found possible, by repeated human passage, to produce a strain which failed to show gametocytes. This asexual strain, which was developed in about two and one-half years, was of particular importance since it (1) eliminated the possibility of transmission of malaria to other members of the community, and (2) precluded the occurrence of malarial relapse following adequate quinine administration. A search for spirochetes in the brains of general paretics treated with malaria revealed the fact that fewer than one-sixth of 40 patients harbored spirochetes (three of these patients came to necropsy within six weeks of malarial inoculation). By the same methods, eight of 10 paretics not treated with malaria showed spirochetes. It was concluded, from investigation of the largest number of cases reported in the literature, that artificially-induced malaria was likely to destroy spirochetes in the brains of general paretics, or that, failing to destroy the spirochetes completely, the malarial form of therapy altered the morphology of

the spirochete to such a degree as to render it degenerate in appearance.

The changes in psychological function accompanying mental deterioration in general paresis, as well as recovery, were investigated from both a quantitative as well as a qualitative point of view. The great interindividual variation in behavior which characterizes this disease made it impossible to arrive at any quantitative findings. The qualitative findings clearly demonstrated the nature of the mental alterations. Certain items from personality and attitude scale questionnaires do tend to constitute a differential pattern of response in these individuals. For example, the paretic considers himself even better adjusted to life than does the normal individual.

In contrast to the schizophrenic, the paretic is able to appreciate an entire absurdity, yet unable to isolate the details which go to make up that absurdity. The "release of function" together with a loss of ability to retain material acquired or learned, plus an exaggeration of mobility or lability in thinking, are the outstanding changes commonly found in paresis.

A comprehensive and detailed contribution was made to the pathological findings following malaria treatment in 29 cases of general paresis, pointing to the beneficial effect that this form of treatment has on the histopathological changes of the brain, and supporting the impressions of clinical improvement with the same type of therapy.

The Institute has always been interested, and properly so, in the greatest problem of psychiatry, namely schizophrenia. This problem still forms one of the major issues in any mental hygiene program dealing with the care and treatment of patients. With the possible exception of the more recent shock therapy (insulin and metrazol), the studies have been rather sporadic and have dealt with many varied aspects. They have included investigations of the prepsychotic personality, of various methods of clinical care, of the vascular bed of the retina in schizophrenics, of the effects of oxygen therapy in treatment of the disorder of schizophrenia in children and in relation to mental deficiency, of the circulation of the fingers in schizophrenia. In addition, a book published in 1931 summarized the various methods of treatment as gleaned

from the literature. With the recent advent of shock therapy in mental disorders, the Institute has again served in its capacity of studying carefully and intensively, by both the insulin and metrazol therapies, a certain number of selected cases. It is not the purpose of a scientific institute such as this to study as large a group as possible for the therapeutic effects only, but to study a rather small selected group by any and all methods practicable, and to attempt to evaluate the effects of such treatment in relation to as many factors in the individual as can possibly be determined. This research, carried out during the past few years, has involved a few hundred patients. Numerous special studies have been made in these cases by other departments, especially those of internal medicine, psychology and neuropathology. Intensive studies concerning clinical features have been made by members of the clinical psychiatric service. A survey was made of the effect of various drugs on the mental state and the metabolism of patients. Only parts of these studies have been published, and the findings have been applied as prognostic aids to other forms of treatment of mental patients. The effect of the administration of sodium amytal and sodium rhodanate on mental patients, and the use of sodium amytal as a prognostic aid in insulin and metrazol shock therapy of mental patients (dementia præcox), are examples of these contributions.

Studies regarding various phases of the physiology of patients during insulin and metrazol therapy of the psychoses were carried out. These consisted of various metabolic investigations, electrocardiographic observations and studies regarding parotid secretion. They revealed the marked effect of such therapeutic procedures upon various phases of metabolism which may be factors in the results obtained. Other phases of shock therapy such as complications and relapses were also reported in a series of several papers.

A seemingly obvious but important investigation conducted first by the Psychiatric Institute in the course of these therapeutic studies was that concerned with the occurrence of various vertebral fractures in the course of convulsive therapy. It involved X-ray and clinical investigation of cases manifesting convulsions during insulin or metrazol therapy. Now well known is the extremely high

incidence of detectable fractures occurring during the course of these convulsions. Studies of this type have undoubtedly made clinicians more cautious in the application of convulsion therapy in the treatment of schizophrenia, and have stimulated many other investigations here and elsewhere bearing on methods of preventing these fractures during therapy.

In keeping with its policy of being primarily a scientific institution, the Psychiatric Institute has maintained, up to the present, a decidedly conservative attitude in estimating the clinical results of such shock therapy. However, a survey now being completed represents an attempt at evaluating the results of such therapeutic procedures at the Psychiatric Institute. It is felt that the function of the Institute in such studies is primarily that of intensively investigating certain aspects of such therapeutic procedures as can be applied properly, within the Department of Mental Hygiene, only at the Institute (this because of the particular training or interests of the members of its staff and because of the special equipment in the laboratories). It has therefore been concerned with special research on a group of such cases, rather than with large groups from a purely therapeutic standpoint. It is felt that these large group studies can be carried out equally as well, if not better, by the various hospitals of the Department of Mental Hygiene.

The psychological phenomena associated with schizophrenia have been investigated from a variety of angles. Personality and attitude tests of the self-evaluative variety have yielded specific syndromes of traits that are characteristic of some types of schizophrenics. These tests should be useful in sorting large populations, such as drafted men or university students, for the purpose of selecting individuals who might need psychiatric examination and treatment. Similar tests combined with controlled interview techniques showed that the course of prepsychotic development in the psychosexual sphere does not differ markedly from that which is observed in normals. Only after the disease sets in do changes begin to appear. The schizophrenic patient does tend to show "affect hunger," inability to resolve family ties and a generalized negative attitude towards sexuality.

In the sphere of the intellectual functions, it was found that the schizophrenic is able to point out the details in a logical absurdity, although unable to appreciate the entire absurdity. The use of sorting tests has shown that the schizophrenic, like the patient with brain injury, is either unable or handicapped in his ability to shift from one concrete attitude to another or to assume an abstract attitude in thinking.

In the field of physiological psychology, it was shown that the injection of adrenalin brought out the typical psychological changes shown by the normal individual and that the schizophrenic did not incorporate these phenomena into any schizophrenic mode of thought. The catatonic schizophrene reacts to sudden stimulation with an exaggerated startle pattern. This pattern of response disappears during convulsions induced by metrazol, reappearing only after the patient has returned to almost full consciousness. During sleep, the catatonic patient loses his rigidity or flexibility and assumes a completely normal variety of postures as long as the sleep continues. On awakening, the catatonic attitudes return almost immediately. These patients are not as mobile during sleep as are patients suffering from other mental disorders, but there is no difference in the quality of their activity.

In attempts to establish differential conditioned responses in schizophrenic patients, it was found that these reactions could be produced, although with some difficulty. After they had been established, they tended to persist longer and to resist efforts to bring about change. This tendency was much more pronounced than it is in any other psychiatric categories, or in the behavior of normal individuals. This is probably related to the general psychological phenomena of "stickiness" which marks all varieties of mental processes in this disease. The Rorschach method of studying personality structure has shown indications of these same tendencies, as well as evidence concerning the essential psychological differences between this type of "stickiness" and difference in the efficiency of function, as those in organic or brain lesion cases.

The relation of schizophrenia to environmental and hereditary factors shows that this disorder can best be considered as a disease following the same ecological principles as tuberculosis. It is re-

lated directly and positively to age and environment, economic, educational and marital status. It shows clear evidence of an hereditary nature. It is not related to the race or nationality of the patient.

Schizophrenia may be thought of as a disease showing a fairly constant psychological picture in which may be isolated certain well marked general tendencies toward a style of disturbance. It is as if the patient had acquired one of several possible etiological agents which may set up a physiological condition leading to a pattern of psychological changes. These changes are most marked in the sphere of mental rigidness. They do not show themselves in any clear fashion in the purely intellectual functions, while the changes in the affective or emotional functions are somewhat more specific.

In the field of schizophrenia, pathological contributions have been offered supporting the contention that schizophrenia is a syndrome, inasmuch as changes in the nature of toxic encephalopathy or diffuse sclerosis have been reported at the basis of some clinical types of schizophrenia.

In the same field, extensive investigations have been carried on to confute the contention expressed abroad that catatonia could be reproduced experimentally through the use of a toxic substance, bulbocapnine (the alkaloid of coridalis clava). The extensive experimental investigations have led to the conclusion that bulbocapnine reproduces only some of the neurological components of catatonia, namely catalepsy.

Also in schizophrenia, a first comprehensive and complete description has been contributed on the pathological findings in the brain resulting from high doses of insulin. These are sufficient to constitute a warning concerning the possibility of damaging the brain tissue considerably with high doses of insulin in the absence of more encouraging clinical results.

Few, if any, have questioned the importance of certain types of experimentation even though they lead to negative results. Considerable furor followed Loewenstein's claim that schizophrenic patients suffered from tuberculous bacillemia. This could be demonstrated only by his method. In carefully controlled studies, this contention has been explored here, and the fundamental findings

were corroborated by the League of Nations survey. Similarly, the claim that the conditioned reflex could produce an increase in immunity was shown to be invalid by the use of a methodology including an unusually high number of controls as well as a special microchemical technique.

The problem of heredity has always been of great importance in schizophrenia. There have been many contrasting opinions regarding the significance of hereditary factors, not only in schizophrenia but in other mental disorders. As a result of many years of study of schizophrenic families in Europe and in this country, a member of the Institute finally published an authoritative monograph on the genetics of schizophrenia in which the conclusion was drawn that there is a definite inherited predisposition to schizophrenia. These and other studies are being continued intensively in schizophrenic twins. The first completed report on 218 pairs of schizophrenic twins, in which again the great importance of genetic predispositional factors to schizophrenia was indicated, was presented at the Seventh International Congress of Genetics at Edinburgh, Scotland, last summer.

It is impossible at present to estimate adequately from an economic point of view the value of all these studies. Shock therapy still awaits accurate clinical analysis of its long term results. It is impossible to predict the amount of savings, undoubtedly great, to the State which might result from the application of proper eugenic procedures along lines suggested by these genetic studies.

The manic-depressive group of mental disorders has always been intriguing because of its frequent confusion with schizophrenia, its periodicity, and possible methods of treatment. Studies of a general clinical nature on the depressed phase, on the personality and on the manic phase of the manic-depressive reaction, were carried out by a member of the staff particularly interested in this disorder. One of the most important developments in this field has come again from the application of a laboratory method to the clinical case. This application is the investigation of parotid secretory rate in various types of depression. It was noted that patients with various types of depression manifested wide differences from case to case. As a result of a rather long study (still in progress) on groups of patients, it now appears that the parotid secretory

test may be of considerable value in determining the type of depression, hence proper methods of treatment and possible outcome. Here again is emphasized the essential function of the Psychiatric Institute in investigating special aspects of relatively small groups: this test, as developed in its study here, is now being applied to larger groups in several other hospitals. The earlier the diagnosis and treatment, the more likely is it that the course of the disorder will be shortened. In fact, with improved methods of diagnosis and treatment, it is probable that many patients who would otherwise have entered a State institution are treated privately or in observation hospitals, thus obviating State care.

During the period 1930-1935, 119 patients diagnosed psychoneurosis (anxiety, hysteria, compulsive and obsessive) were admitted at the Psychiatric Institute and treated by various types of psychotherapy. Subsequently a study was made of the relative effectiveness, in terms of duration of hospital stay, of treatments given such patients at the Psychiatric Institute as compared with the results obtained at several other places. The average duration of hospital stay of these patients at the Psychiatric Institute was 6.2 months; at the Maudsley Hospital, the duration of hospital life for similar cases was 6.0 months. At the Casell Hospital it was 4.1 months, at the Berlin Psychoanalytic Institute for completed cases it was 17.1 months. The results of this study are embodied in a chapter of the book entitled "Concepts and Problems of Psychotherapy." The problems of the psychoneuroses, however, are still with us and will continue to form interesting fields for investigation by the clinical and laboratory sections. One indication of possible laboratory procedures is seen in the method for investigating the effect of repression on the somatic expression of emotion in vegetative functions. Material was presented in a report dealing with various vegetative functions, such as heart-beat and gastrointestinal motility associated with the effect of repression of a mental stimulus induced under hypnosis. Possible relationships between mental function and mechanisms and vegetative functions were thus opened to objective study. Studies of this type, though extremely difficult, should undoubtedly be continued by psychiatrists trained in both the psychological and basic laboratory science.

Behavior problems in children have always been in the foreground, and the possibility of schizophrenia in children has always been of interest and scientific importance. The very existence of schizophrenia in young children has often been questioned by many psychiatrists. On the children's service at the Psychiatric Institute, a group of children judged by some to be schizophrenics and by others to be suffering from various types of hysteria and other behavior problems was tested by several methods during the past few years. This work has many aspects which it is impossible to present in this report. One of the most interesting features, however, would seem to be that many children who present superficially psychiatric disorders or behavior problems may have some organic substratum for their condition. This was indicated in a group of patients by the finding, in many of the children, of organic elements as detected by electroencephalography, pneumoencephalography, and response to drug therapy. It is impossible to predict the importance of the results of such studies. To be sure, similar studies have been and are being made elsewhere, but the one thing which these studies seem to indicate as important for the future is that all children suffering from even what appear to be simple behavior problems should be investigated thoroughly from the organic standpoint.

For several years, the Institute has been actively interested and engaged in research in the field of mental deficiency. Studies were made on schemes of classification of various disorders associated with mental deficiency, on relationships of mental deficiency to other problem disorders, on programs of treatment of mentally deficient children in State schools, etc.

Based on pathological investigations, a new concept has been introduced relative to the pathogenesis of megaloencephaly which for the first time has been considered the expression of a diffuse medulloblastosis. In the same field, a detailed study of pathological findings in 17 cases of tuberous sclerosis has substantiated the but recent conception that tuberous sclerosis should be considered an expression of diffuse neurospongioblastosis.

Whenever new laboratory facilities and methods become possible from time to time, they are made available, as a result of which the usual clinical research activities are supplemented by specialized

techniques, for example electroencephalography, which is an application of electrophysics and electrophysiology to the study of the functions of the nervous system. To date, electroencephalography has been applied at the Institute in several areas: (1) behavior problem children; (2) epileptics and their families; (3) neurological cases, particularly with brain tumor; (4) study of the potentials of the exposed human brain at operation; (5) study of the effects of various drugs, such as metrazol; and (6) recordings of the potentials of cases at the Institute having various clinical diagnoses such as schizophrenia. The last named constitutes a long term affair, for it is only by obtaining analyses of hundreds of patients that results from this type of work may assume importance. The results in the other fields indicated, however, have so far been rather definite. The electroencephalogram has shown abnormal brain function of an organic type in a high percentage of a group of behavior problem children. In addition, it has supplied us with a valid method of control of the clinical efficacy of medications such as luminal and benzedrine. In the examination of epileptics and their families, electroencephalography has shown a higher incidence of abnormal potentials in the families of epileptics than in control groups studied elsewhere. More recent investigations performed in collaboration with colleagues at the Neurological Institute seem to demonstrate conclusively that electroencephalography may be of great value in localizing pathological lesions, such as tumors, in clinical neuropsychiatric cases. Recording the potentials from the exposed human cortex at operation, again performed in collaboration with the Neurological Institute, has indicated promising results. A study of electroencephalograms recorded following the injection of metrazol demonstrated clearly the possibilities of recording by this method the presence of electrophysiological occurrences in the brain, which are not, nevertheless, manifested in clinically observable phenomena. The potentialities of this method of analysis of nervous system function are undoubtedly great, and the limits are as yet beyond visualization. The conservative attitude, however, is again adopted at the Psychiatric Institute with regard to such procedures, in the light of the inherent complications

in the methods and the great technical skill required in their demonstration and interpretation.

Another laboratory contribution arose from the study of the startle pattern in epileptic patients. This brought out some most interesting results. In at least one-half of the epileptic cases, the startle pattern was either absent or grossly altered. This absence or change in pattern was not related to the degree of deterioration, type of disease, age, medication, recency of convulsion or any other clinical or neurological factor on which information was available. We have, then, a shift in reflex function in epilepsy, occurring independently of the varieties or conditions of the disease process.

A method of making such a quantitative estimate of the degree of mental deterioration of any psychopathic patient would be of real value. If a scale were available, one could state the speed of the disease processes, determine where the deterioration was taking place, and probably arrive at some notion of outcome. Epilepsy offers an excellent field for study of the deterioration processes, since in the idiopathic cases we have an almost pure culture of mental deterioration, relatively uncomplicated by other attendant circumstances. It has been shown that the deterioration process is, in epilepsy, a rather unified and uniform procedure. Not only do vocabulary and word usage deteriorate, but they do so at about the same rate as other varieties of psychological function, such as memory, ability to make associations, or motor responses.

It was furthermore shown that the convulsive phenomenon elicited by the injection of metrazol was closely comparable to, if not identical with, the grand mal epileptic seizure. The analysis of this seizure showed that it consisted of a clonic phase, a tonic phase, and a second clonic phase.

Then again, the possible role of allergy or anaphylaxis in the mechanism underlying certain neurological conditions, particularly epilepsy, has offered an interesting field of investigation. In experiments on dogs, it was shown that when a protein is placed in contact with one side of the brain, either by direct injection or in a collodion sac, subsequent intravenous injection of the same antigen produces contralateral focal symptoms. The principal animals used for research in anaphylaxis have traditionally been the guinea pig, the rabbit and the dog. The monkey has been regarded

as refractory. By means of a special technique developed in the Institute laboratory, it has become possible to cause shock at will in the monkey. An exhaustive investigation established the fundamental anaphylactic phenomena in the Rhesus monkey, namely severe and fatal shock following active sensitization, Arthus reaction, passive transfer, presence of precipitins, skin reactions, reduction in number of blood platelets, etc. This means that the monkey will be the animal of choice for experiments on anaphylaxis, particularly where the central nervous system is involved. Such studies are now in progress.

Many other projects should be mentioned, in view of their psychological interest and possible wide applications.

Detailed and exhaustive research has been carried out and published dealing with the physiological and anatomical conditions governing the appearance of changes in electrical resistance or impedance which occur in response to a variety of stimuli. It is thought that this work may have an important future in diagnosis and treatment.

Questionnaire studies of attitudes and personality structure

A wide variety of personality inventories and attitude scales have been made relating to psychiatric patients. A number of the more differential items included in these scales were selected with respect to their relation to the abnormal personality. The fundamental basis for a questionnaire which will differentiate the various diagnostic categories is now available. In the Institute project for the investigation of catatonia, the department of psychology studied the sleep postures of these patients and their ability to form, retain and shift conditioned responses. The department of psychology, together with the department of chemistry, made an elaborate investigation of an individual who maintained vigil of ten days at the Institute. During this period, he had less than three hours of sleep. The results of this work have never been reported in full.

Under a grant from Columbia University, material was obtained both in America and in Europe, and published in book form, on the relationship between environmental and biological conditions such

as age, sex, economic status, marital status, heredity, etc., on the incidence, outcome and prognosis of mental disease.

A grant from the Markle Foundation made possible the purchase of superspeed and hyperspeed cameras, which have been applied to the analysis of rapid biological activity. This method has been used in the study of the startle pattern, epileptic convulsions, metrazol convulsions and cardiac action.

Under a grant from the National Research Council, an extensive study was made of the role of sex in personality development, together with a study of associated physiological functions and anatomical structure in the same group of individuals. This is probably the most elaborate and complete investigation which the department of psychology has carried out during the past ten years, and is now ready in book form.

Making use of modifications of techniques developed in the study of brain lesion cases, it was found that the ability to shift from concrete to abstract attitudes is related to the prognosis and recovery from schizophrenia under insulin therapy.

Those working in clinical psychology have worked out a set of criteria based on Binet test results which are of assistance in making clear differentiation between functional and organic conditions in behavior problem children. They have also made use of the Rorschach technique to investigate personality structure in schizophrenia, prognosis for outcome under therapy, and the differentiation of functional from organic psychopathological conditions.

During the past ten years, a large number of publications have been made on endocrine and other metabolic phenomena not previously mentioned in this account, and there is still a sizeable amount of completed work to be reported. As far as the endocrine studies are concerned, they represent two types of approach to the problem of the role of the endocrines in mental illness. One type dealt with investigations to determine whether the physiology of certain phases of the endocrine system had been altered. These studies involved intensive quantitative hormone assays over prolonged periods of time. The second type of study dealt with investigations on the effect of the administration of various endocrine products on the mental state. By these means, it was hoped to gain information concerning the possible role of the endocrine sys-

tem in the production of mental symptoms, and the effectiveness of certain therapeutic procedures.

Special investigations were made on the possible existence of a monthly sex cycle in the human male, on some metabolic considerations regarding diabetic psychoses, on the urinary excretion of gonadal-stimulating substances in mental patients, on the excretion of follicle-stimulating hormone in urine of mental patients during and after menopause, on a convenient method for the preparation of concentrates of follicle-stimulating hormone from urine, and on follicle-stimulating hormone obtained from urine of women in and past the menopause.

Investigations on various phases of the metabolism of muscle, with special reference to neuromuscular diseases, were carried out over a period of several years. Also, extensive studies were made regarding glycine therapy in these diseases. This work showed important metabolic differences in various clinical syndromes which are of diagnostic and theoretical significance. An evaluation of the metabolic and therapeutic effects of glycine treatment was published after careful study of a large group of cases. Other interests lay in phosphorus metabolism in muscular disease, in some aspects of intermediary protein metabolism, in the myopathies with special reference to glycine administration, and in progressive muscular dystrophy.

The outstanding result of this investigation was the finding that glycine administration to patients with muscular dystrophy brought about a marked increase in creatine excretion. The effect was specific, not being shown by a considerable series of other compounds which were tried. On the basis of this discovery Thomas, Milhorat and Techner tried glycine in the therapy of muscular disease, claiming favorable results. It was not possible to confirm the claim in tests carried out by this department in collaboration with several clinicians. Patients with progressive muscular dystrophy and myasthenia gravis were fed glycine for as long as three years without definite improvement.

Metabolic studies regarding the inborn error of sulfur metabolism as seen in cystinuria consisted of a series of investigations whereby it was hoped to gain insight not only into the nature of the inborn error in metabolism, but also into allied phases of me-

tabolism in which the sulfur compounds in the body might play a part. This was an extended and complex investigation which cannot be summarized adequately in the space available. Perhaps the outstanding result was the finding that cystine and cystein are not metabolized in the same way. Cystine, administered to a cystinuric, is oxidized to inorganic sulfate, while the feeding of cystein results in an augmentation of urinary cystine. Methionine administration also brought about an increase in cystine excretion, a finding which indicates that it is metabolized via cystein. Homocystine, like cystine, was oxidized largely to inorganic sulfur, while homocystein gave rise to an increased cystine excretion. The finding indicates that homocystein is an intermediate in the conversion of methionine to cystine. As part of this investigation, several methods for quantitative determination of sulfur-containing compounds were developed or improved. The accidental discovery of cystinuria in a thoroughbred dog opened the possibility of developing a colony of dogs with this metabolic anomaly. Such a colony was established.

During the past few years, the Institute has found opportunity to participate more actively in brain chemistry programs. This great field of neurochemistry offers a number of interesting leads and challenges to research. It is the ambition of the Psychiatric Institute to become the leader in this work. A résumé of the work done there to date indicates that the Institute is already a contributor to the knowledge of the chemical function of the brain. Eventually the day may come when practical application of such knowledge can be made.

In the investigations on brain metabolism carried out with the Warburg technique, it was found, in confirmation of previous reports, that narcotics inhibit some kinds of brain oxidation; that of all the amino acids studied, glutamic alone could be oxidized; and that the respiration of brain tissue in rats varying in age from one day to over one year reaches a maximum at 21-28 days, then gradually declines.

Brain proteins free from appreciable amounts of blood proteins were isolated from 10 animal species, including man, and compared on the basis of their content of nine amino acids. No differences were found, though there was some evidence that the proteins from

young animal brains contain less histidine than adult brains. A comparison of proteins from different portions of the brain was also undertaken. In order to extend such comparative studies of brain proteins, it appeared desirable to determine other amino acids, for which quantitative methods were not available. Hence the development of such methods was undertaken; some have been accomplished, while others which show decided promise are now in progress. The brain proteins were separated into four distinct fractions: neurokeratin, neuronucleoprotein, neurohistone, and neurogelatin. The presence of a keratin in the brain led to a comprehensive comparative study of keratins from many different sources. The results suggest that keratins may be divided into two classes: eukeratins and pseudokeratins. The former are characterized by a constancy in the ratio of the three basic amino acids, while the pseudokeratins do not exhibit this constancy. On this basis, neurokeratin may be classified as a pseudokeratin. The soluble proteins, neurohistone and neurogelatin, are similar in physical properties to histones and gelatins from other sources though they were found to differ in amino acid composition.

A method for the quantitative determination of phenylalanine, developed in the Institute, was employed in metabolic studies in phenylpyruvic oligophrenia. Studies along these lines are still under way.

In the investigation of brain lipids (still in the preliminary stage), deuterium is being used as an indicator of brain lipid metabolism. The results obtained so far show that in adult rats the metabolism of brain lipids is much slower than that of other tissues studied for comparison. In young rats, however, during the period when myelination is proceeding rapidly there is a rapid metabolism of brain lipids, comparable to that of the liver. This result opens up many possibilities for future study, e. g. for finding out what types of fatty compounds are selected or synthesized by the brain before being replaced. The investigation is being continued along these lines with the hope that it may lead to knowledge, hitherto unavailable, concerning the function of the lipids which comprise over half the dry material of the brain. The investigation of cholesterol distribution in the brain is another active chemical project. Cholesterol has been determined by a procedure

developed in the Institute in over 20 areas and structures of cat brain. The data are being analyzed statistically.

Attempts to demonstrate the presence of a cholesterol esterase in brain have failed thus far, but little evidence for its presence in liver has been obtained with the same technique. A new procedure is now being developed in model experiments with pancreatin; it will be applied to brain and liver. A large body of data on the concentration of cholesterol fractions in the blood serum of patients with mental disorders is being accumulated with an accurate method. The findings will be subjected to statistical analysis, in the hope that various controversial points may be settled.

A comprehensive investigation of glutathione metabolism was undertaken. This substance is of particular interest because one of its components, glutamic acid, is the only amino acid oxidized in the brain. Although the study is still in the preliminary stage, it has been found with the aid of isotopic nitrogen that the metabolism of this tripeptide is exceedingly rapid.

A study of methylation processes was undertaken in an attempt to explain the formation of methylated substance (e. g. choline and adrenalin) which take part in the chemical transmission of nervous activity. One of few naturally-occurring substances capable of furnishing methyl groups is methionine. The work has revealed a new reaction by which this compound may be catabolized.

In the field of demyelinating diseases, for the first time the adult variety of familial diffuse demyelination has been described, a variety which in the literature has now been labeled the "Ferraro variety of adult familial leuco-encephalitis." In the same field (likewise for the first time), the experimental reproduction of diffuse demyelination has been obtained by the use of cyanide poisoning. Through the use of cyanide, it has also been possible to reproduce experimentally for the first time the pathological findings of the concentric type of demyelination (balo disease), and the ones of demyelination of the corpus callosum (Marchiafava-Bignami disease). Also, an attempt at classification of all primary demyelinating processes has been presented in order to clarify the extreme confusion existing in this group of demyelinating diseases.

The Institute has contributed considerably to experimental pathology, particularly to the study of pathological changes in the cen-

tral nervous system in various forms of endogenous and exogenous intoxications, among which are lead, cyanide, insulin, alcohol, indol, histamine, phosphorus, carbon monoxide, carbon disulfide and cobra venom. Studies of experimental lipoidosis have been carried on using cerebrosides and phosphatides (sphingomyelin, cephalin, kerasin and others). Successful reproduction of the characteristic pathological findings of Niemann-Pick's disease and Gaucher's disease have been obtained in animals. This has been part of an investigation tending to establish the correlations between the first-mentioned disease and Tay-Sachs' disease (amaurotic family idiocy). Along the same lines, successful attempts have been made at reproducing an experimental encephalopathy in monkeys following the subcutaneous injections of rabbit's brain extract in the animals.

Investigations have been made, particularly in the field of experimental neurology, in order to improve our knowledge of the structure and function of various portions of the central nervous system essential for the evaluation of pathological findings in mental disorders. Serial sections were made of the central nervous system of approximately 400 monkeys in which various experimental lesions of the central nervous system had been performed. As a result of this exceptional material, substantial contributions have been made to the physiology and anatomy of the posterior column fibers, posterior column nuclei, the medial lemniscus, the nuclei and fibers of the vestibular system, the various lobes of the cerebellum, and the motor and sensory areas of the cerebrum.

Numerous pathological reports have been published of detailed findings in cases of brain tumors, senile psychosis, Alzheimer's disease, ophthalmoneuromyelitis, myelomalacia, encephalomyelitis following measles and Tay-Sachs' disease. A detailed and comprehensive pathological investigation of the lesions in the brain of so-called Pick's disease has been contributed with the results pointing to the functional vascular origin of such a disease. Substantial contributions have been made to the pathological changes in microglia and oligodendroglia, among which it was established for the first time that microglia cells undergo a process of acute swelling and that oligodendroglia do transform into amyloid bodies. These concepts have been accepted by other investigators abroad.

Progress in the treatment of constipation and diarrhea has been made by studies on *L.* acidophilus therapy. On Ward's Island, this form of therapy was successful in saving the lives of many general paretics with terminal diarrhea, and was used in the treatment of constipation of patients with functional psychoses. A continuation of these studies, which were the first to place this therapy on an objective clinical and bacteriologic basis, showed that the ingestion of one liter of acidophilus milk per day containing not less than 200,000,000 viable organisms per c.c. would transform the intestinal flora from a gram negative to a gram positive type. When fecal specimens show 95 to 100 per cent *L.* acidophilus plated on a selective medium, the subject has normal daily defecations. Lactose was found to be a valuable adjunct in such therapy. It was shown that constipation in the mentally diseased cannot be ascribed to a deficiency of *L.* acidophilus, even though this organism can be used therapeutically. Further studies with the organism itself have shown certain fundamental biological characteristics, namely that pure line rough and smooth strains of *L.* acidophilus are antigenically distinct and form different kinds of lactic acid from the standpoint of optical activity.

New York State is more than a benefactor for its own citizens; its leadership in the practical care of its mentally ill charges is exemplary in the United States and abroad. But it is not enough only to provide the sick with nourishment, shelter and medical care. Every effort must be made to prevent these mental conditions: one way to proceed is to improve the educational systems and to disseminate knowledge.

In this day and age, it should not be necessary to prove the value of an educational system that is well organized. Since its beginning, the Psychiatric Institute has been a teaching and training center for the Department of Mental Hygiene. Since 1930 it has added appreciably to its teaching and training activities. It instructs undergraduate and graduate medical men, nurses, social workers, psychologists and teachers. The following list indicates the spread of the training activities, and reveals the unique opportunity afforded the Institute for disseminating psychiatric knowledge during this 10-year period:

Undergraduated medical students (approximately)	1,000
Psychological students	690
Nurses (including postgraduate and affiliating)	1,600
Students in social work (since 1932)	157
Psychiatrists from State hospitals in post-graduate course (9-year period)	211
Psychiatrists from outside State service postgraduate courses (9-year period)	48
Psychiatrists trained in neuropathology (N. Y. State)	12

In addition to these items, special training has been given on an individual basis to many other pathologists, clinical psychiatrists and psychologists.

Although patients are admitted to the Institute for the particular purpose of investigating their disorders, they are afforded modern therapy, and the outpatient department has attempted to serve the interests of the community. The first cases were taken in the outpatient department in November, 1929; since then, 4,482 adults and 1,532 children, a total of 6,014 patients, have been admitted and intensively studied there. In addition, it has received visits from, and has given advice to, 23,934 adults and 9,300 children, a total of 33,234. During this period there have been 52 attending psychiatrists exclusive of the resident staff.

The first cases were admitted to the Institute hospital service in January, 1930. Since then, 2,375 adults and 699 children have been under its immediate care and investigation. During this eight-year period, 48 residents and 27 voluntary residents (externes) have been assigned to, and trained in, the hospital service. Eight physicians have served in the capacity of senior and junior psychiatrists in occupying the five positions available on the clinical service.

The arrangement of the clinical and laboratory facilities is such that it is possible to combine the investigation of the patient, his treatment, and the training components in the situation in a manner that is highly desirable in our present need for the integration of whatever knowledge is available.

The present excellent psychiatric library is an invaluable aid to the advancement of conditions relating to the care and treatment of the mentally ill charges of the State, as well as for progress in re-

search. Readers utilizing the library run into thousands, and anyone interested in psychiatry and allied subjects is encouraged to utilize its facilities.

It may appear that the foregoing remarks as a whole are attempts to overemphasize the present value of the Institute, and to boast of past attainments, but this is far from the actual intention; it is really to emphasize the chief functions of an organization which should do even more toward the solution of urgent problems, and it is to this end that the staff of workers is now focusing its attention. The writer trusts that during the next 10 years, the Institute will be able to aid substantially in clearing up some of the obscurities in the field. Scientists will eventually obtain useful results, individually and collectively. Science is the only way out. If one really desires to understand mental disorders, the individual himself must be studied scientifically from every conceivable standpoint and by the aid of every suitable method. The data thus secured are submitted to critical analysis in an attempt to explain the abnormal phenomena in the light of current knowledge.

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RELATIVE EFFECTS OF PHENOBARBITAL AND SODIUM BROMIDE AS ANTICONVULSANTS IN EPILEPTIC PSYCHOSES

BY ROBERT W. SOUTHERLAND, M. D.

This paper records certain clinical observations made during the continued treatment of a group of female patients suffering with epileptic psychoses. In particular, it relates a comparison of the effects of phenobarbital and sodium bromide in reducing the frequency of grand mal convulsions. In addition, the therapeutic advantage gained by alternating doses of the two drugs is pointed out.

With the ultimate aim of establishing a therapeutic routine which would bring the patient into better rapport with the physician for psychotherapy, the various factors entering into the treatment of epilepsy were intensively studied in succession. Since the convulsive seizure seemed to be most challenging, this factor was attacked first. It is obvious that psychotherapy is almost futile in an actively convulsive patient, who frequently forgets all suggestion given prior to the clouded state or period of excitement preceding or following a grand mal seizure. This report deals only with the effect of medical treatment in reducing the frequency of convulsions. The patients herein discussed suffered from typical grand mal convulsive seizures.

Method of Study

The patients resided in a continued treatment unit on two wards. The group was composed of advanced epileptic psychotic women whose illness had necessitated commitment to a mental hospital for several years. They were selected only on the basis of their willingness to accept the medicine given regularly, hence the disparate numbers of patients in the separate groups studied. A larger number were treated, but some individuals refused to change drugs and others took the medicine irregularly. These cases were not regarded as satisfactory for the convulsion counts made.

In a group of 23 patients treated with phenobarbital grs. 1, b. i. d., a slow transition was made by substituting sodium bromide grs. 15 for each ½ grain of phenobarbital. This was carried out over a period of two weeks. Results are seen in Fig. 1.

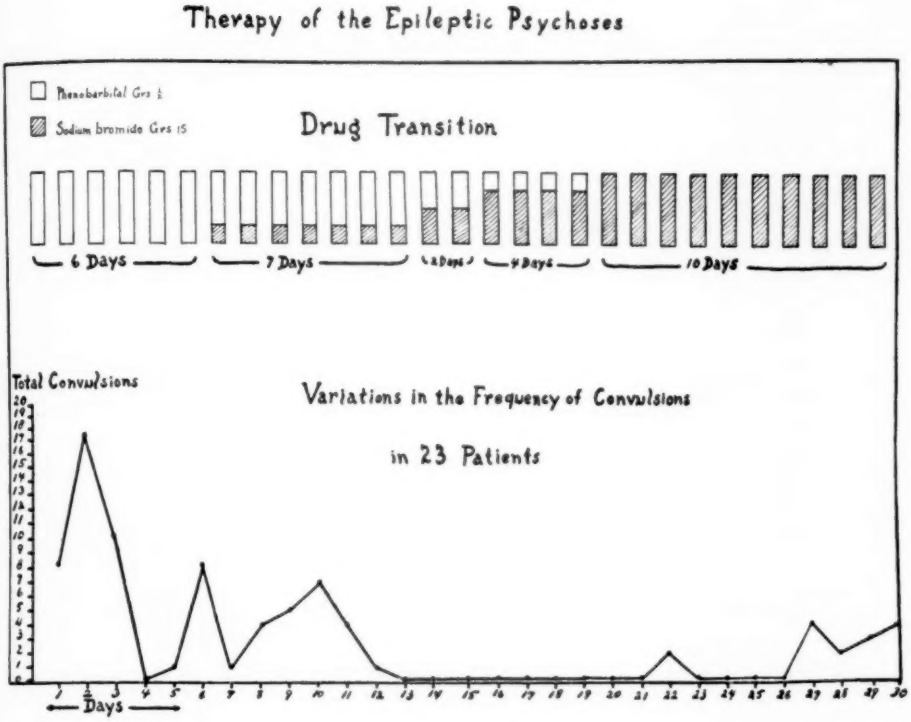


Figure No. 1

It became obvious that alternate doses of phenobarbital grs. 1 in the morning and sodium bromide grs. 30 in the afternoon was a possible indication, since the convulsions appeared to be less at this point in the transition. However, the period of time was too short and the number of patients too small to warrant any such conclusion.

In an attempt to obtain more information on the relative values of the three treatment routines, a group of the most actively convulsive patients was observed for the same period on each treatment. The results are shown in Table 1.

Five cases of bromism occurred in other patients on the ward while sodium bromide grs. 30 b. i. d. was used as a routine. It was therefore decided to use the alternate dose treatment of the two drugs, since this gave approximately the same reduction in seizures as sodium bromide alone and did not produce intoxication.

TABLE 1

Hospital number	Number of grand mal convulsions in 77 days		
	Routine I	Routine II	Routine III
4500	13	0	8
4338	44	24	8
4586	35	7	14
4880	10	0	1
4558	8	0	7
4366	21	14	10
4559	14	4	4
3965	9	8	17
4856	13	9	14
2913	33	7	11
4390	19	23	15
4393	11	6	1
3801	22	3	1
3347	29	3	5
Totals	281	108	116
Drugs used	Phenobarbital grs. 1, b. i. d.	Sodium bromide grs. 30, b. i. d.	Sodium bromide grs. 30 in p. m. Phenobarbital grs. 1 in a. m.

On another ward a group of 40 patients was abruptly changed from a routine of phenobarbital grs. 1 b. i. d. to one of phenobarbital grs. 1 in the morning and sodium bromide grs. 30 in the afternoon. The results of this sudden change are shown in Table 2.

In order to determine whether the totals were misleading due to the fact that one or only a few patients were benefited, another graph was made covering the period of transition. Simultaneous curves were plotted for frequency of seizures and for the numbers of patients having the seizures. The results are shown in Fig. 2.

COMMENT

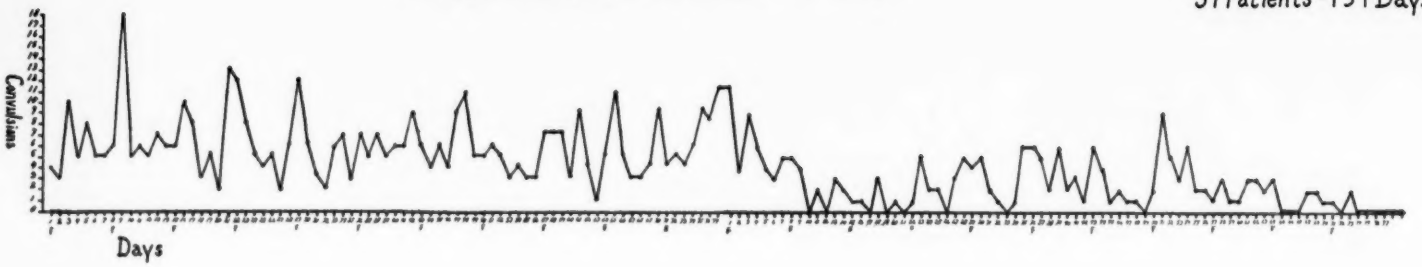
Despite the reduction in the total number of seizures for the group seen in Table 1, there were two patients on the alternate-dose treatment who had more frequent seizures than when on phe-

TABLE 2

Hospital number	Number of grand mal convulsions in 77 days	
	Routine I	Routine II
3788	17	5
3789	13	2
3796	11	6
3137	14	4
3805	9	5
4323	44	26
2951	8	6
3807	17	3
4122	2	3
3812	5	1
3817	0	0
3821	2	0
4438	18	4
3828	29	17
3834	19	12
4241	8	0
4151	1	1
3184	28	27
3890	37	22
3905	27	17
3907	7	1
2641	5	2
2644	11	2
3920	2	2
3930	5	1
3932	15	13
4557	9	5
3955	6	3
3956	20	5
3962	3	0
3907	3	3
3988	1	0
4387	7	1
4388	19	7
3995	21	4
4013	17	0
4021	19	6
2919	0	1
4026	4	3
4045	13	3
Totals	496	223
Drugs used	Phenobarbital, grs. 1, b . i. d.	Phenobarbital grs. 1 in a. m. Sodium bromide grs. 30 in p. m.

Therapy of the Epileptic Psychoses C. T. S. Bldg. 14

39 Patients - 154 Days



Phenobarbital Grs. 1 A.M. and P.M. — Phenobarbital Grs. 1 A.M. and Sodium Bromide Grs. 30 P.M.

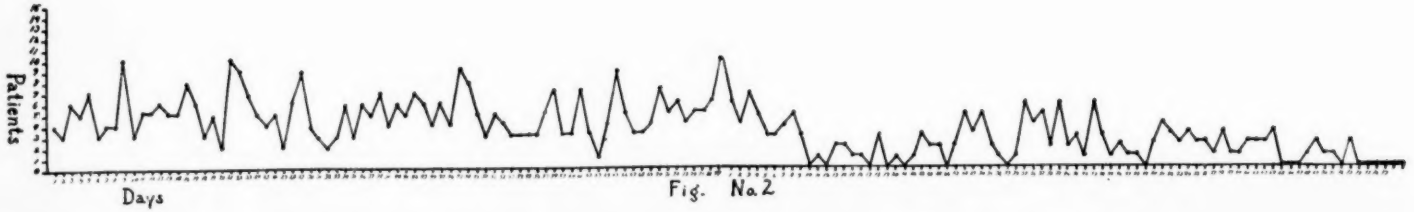


Fig. No. 2

nobarbital alone. The remaining 12 patients (85 per cent) had fewer seizures. Eight had more seizures on the alternate-dose treatment than on sodium bromide alone (Table 1). In the group of 40 patients in Table 2, two patients showed an increase on the alternate-dose treatment and four showed no change. The remaining 34 patients (85 per cent) had fewer seizures on phenobarbital grs. 1 in the morning and sodium bromide grs. 30 in the afternoon than when receiving phenobarbital grs. 1 b. i. d.

Summary

1. The anticonvulsant effect of phenobarbital, sodium bromide, and alternating doses of the two drugs was studied in a group of women suffering from epileptic psychoses of several years duration.

2. Bromism was encountered as a complication when sodium bromide grs. 30 b. i. d. was given regularly.

3. Approximately the same reduction in seizures was obtained by using phenobarbital grs. 1 in the morning and sodium bromide grs. 30 in the afternoon, no toxic symptoms ensuing.

4. The reduction obtained in grand mal convulsions was 44.9 per cent on the routine of alternate doses of phenobarbital and sodium bromide as compared with phenobarbital alone. This occurred in 85 per cent of a group of 40 patients.

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METRAZOL THERAPY IN THE FACE OF SEVERE PHYSICAL DISORDERS

BY G. WILSE ROBINSON, JR., M. D., AND PRIOR SHELTON, M. D.

Ever since von Meduna[1] introduced metrazol convulsive shock for the treatment of schizophrenia, its use has been enlarged and the indications increased to include many other abnormal reactions. Bennett,[2] Young and Young,[3] and one of the present writers[4] have reported on the beneficial results in the involutional melancholias and the agitated depressions. Low and associates[5] reported on a series of severe functional, nonschizophrenic reactions with gratifying results. In any treatment of so severe a character, complications are to be expected and limitations on its use have been advised. Bennett[2] warned against its use in patients with cardiac disease or marked arteriosclerosis. McAdam[6] and Dick and McAdam[7] have reported on cardiac accidents during treatment. Polatin, Friedman, Harris and Horwitz,[8] and Bennett and Fitzpatrick[9] reported a high incidence of compression fractures of the vertebrae. Hamsa and Bennett[10] reported several fractures of the extremities and compression fractures of the spine. Beckenstein,[11] Winkelman,[12] von Meduna and Friedman,[13] and Wespi[14] have all reported skeletal complications and dislocations.

Hamsa and Bennett[10] first advocated the use of spinal anesthesia to prevent fractures and dislocations of the spine, pelvis and lower extremities. Other methods have been advised to prevent these complications. However, no reports have been made concerning what to do about the continuation of therapy when a fracture has occurred, or concerning what method of procedure is advisable when heart disease or severe arteriosclerosis is present. The writers' experience with the procedure has included the following: two patients with marked arteriosclerosis and cardiac disease, but with a typical mental picture of an agitated depressive psychosis; one patient with heart lesions, but well compensated—(conditions existing prior to treatment which might be contraindications); one fractured acetabulum and one compression fracture of the shoulder, occurring during the course of treatment. All these patients seemed likely to receive great benefit from the use of the treatment, or the continuation of it in those cases where the complications had developed. It was determined to proceed with the treatment of these

cases. Consultations were held with the families, the dangers and procedures were carefully explained, and their permission was received to undertake shock therapy. It must be stated that in four cases the writers were not sure of the probable result even so far as life was concerned. The outcome of these cases was so successful that the writers wish to report them at this time to show that metrazol convulsive shock can be given with the same expected good results in the presence of physical abnormalities as in the apparently physically well, young and middle-aged individuals.

Case Material

Case 1. E. G., white female, age 84, was admitted May 22, 1939, with a chief complaint of confusion, agitation, depression, with ideas of inadequacy and of the "unforgiveable sin." Onset occurred about six months before admission. Progression had been gradual and continuous. General physical examination was negative except for pulse of 100, and an arteriosclerotic retinitis with partial detachment of the retina. Weight was 110 pounds.. The electrocardiogram showed defective intraventricular conduction, sinus tachycardia with probably a diffuse myocarditis. She was given daily 1000 c.c. of 10 per cent glucose intravenously for three weeks, with no change in the clinical picture. Following this, she was given five general convulsive shock reactions. The glucose infusions were continued throughout, and the heart was supported with digitalis, amino acetic acid and thiamine chloride. On two occasions some edema developed in the extremities. The electrocardiogram taken during the fourth reaction showed no marked change from the original tracing, but five minutes later some extra systoles without change in form were noted. The patient made a complete recovery from her abnormal mental reaction, was discharged July 7, 1939, and has remained well since. Weight at discharge was 113 pounds. The three pounds were gained during the course of metrazol.

Case 2. A. S., male, age 75, was admitted April 29, 1938, with a chief complaint of confusion, periods of mutism, loss of appetite, restlessness and insomnia. The family first noticed that about a year before admission he had become quieter than usual, losing in-

terest in the evening dinner table discussion of topics of the day, which had been a family custom for many years. The onset, thus, was gradual, and it was only in retrospect that the family determined that he had "not been himself" for over a year. Two weeks before admission he began to show confusion concerning times, places and persons, and made some business moves which were contrary to his lifetime habits. His physician placed him in a general hospital for study. During his week's residence he refused to eat, took no liquids, and developed insomnia and nocturnal restlessness to a marked degree. His confusion deepened. He was transferred to the Neurological Hospital. Examination revealed the above mental reaction, with marked evidence of dehydration and malnutrition. The patient seemed on the verge of exhaustion. Temperature each evening rose to 99° F.-100° F., and the pulse ranged from 84 to 100. Sedimentation rate was 48. Otherwise the laboratory studies were all within normal limits. Daily, he was given 1000 c.c. of 10 per cent glucose intravenously. On May 5 he began to talk rather freely and demonstrated definite paranoid trends. His physical condition improved slowly but steadily until about the middle of June. He had gained seven pounds from his admission weight of 141. His mental condition likewise seemed better. About this time he began to relapse and became steadily worse until about the first of August. During this interval, there were several periods during which his ankles were markedly swollen. An electrocardiogram showed moderate left ventricular strain with sclerosis of the aortic valve and the aorta with diffuse low grade coronary sclerosis. He had been given digitalis, thiamine chloride and amino acetic acid; infusions were continued. The decision to give metrazol was reached August 16, when the mental condition seemed hopeless. He received six convulsive shocks at four-day intervals. Marked improvement was noted after the fourth shock, and he was discharged September 18, 1938, markedly improved. His weight on discharge was 145½ pounds. Since then, he has been at home and apparently well adjusted. His business affairs had been closed while he was in the hospital, and he is apparently content to live the life of a retired business man. He has periodic attacks of edema of the ankles, but his heart is apparently as sturdy as it was before the metrazol course.

Case 3. W. H., white, male, age 60, was admitted July 1, 1938, with the chief complaint of "nervousness," restlessness, depression and mutism. The condition came on gradually over a period of three years, the symptoms becoming severe during the three months prior to admission. Examination at the time of admission revealed the above mental status. Physical examination revealed a right inguinal hernia. Otherwise there was no gross abnormality. Laboratory examination showed a sedimentation rate of 12—otherwise all findings were within expected limits. There seemed to be a general concentration of all solid elements in the blood, probably due to dehydration. Electrocardiogram showed an incomplete left bundle branch block, due to ventricular organic myocardial change. Weight at admission was 148 pounds. Temperature varied from 97° to 100.2° F., and pulse ranged from 80 to 102. He was placed on daily infusions of 500 c.c. of 10 per cent glucose. After six weeks he seemed definitely worse. His weight had fallen to 140 pounds, and he was constantly mute. The decision was reached at this time to use metrazol, despite the heart lesion, as evidence indicated a malignant mental state from which recovery could not ordinarily be expected without the use of shock therapy. He was given 12 metrazol injections, four of which produced no convulsion. The 8 convulsive reactions were spaced at four-day intervals. The heart was supported during the course of treatment with amino acetic acid, digitalis, thiamine chloride and intravenous glucose. Electrocardiogram made after the second convulsion showed some increase in the intensity of the heart lesion, but the record taken at the end of the treatment showed no change resulting from the remaining six. He was discharged September 19, 1938, markedly improved. He had gained six pounds during the metrazol treatment. He returned to his farm, but two weeks later drowned in his pond while doing the chores. The family had noticed no return of symptoms and felt that it was accidental, although the coroner reported the death as suicide.

Case 4. L. W., white female, age 68, was admitted to the hospital March 14, 1939, with chief complaints of "nervousness," despondency, insomnia, agitation, paresthesias of a burning type over the entire body, and addiction to barbiturates. Barbituric acid derivatives were consumed in amount from 5 to 15 grs. daily. Onset

of symptom was in 1936, following the death of her mother and sister within a few months of each other. The condition rapidly reached its peak, remaining more or less stationary during the two years preceding admission. Physical examination at the time of admission revealed only evidence of marked loss of weight (65 pounds during the 2½ years of illness). Laboratory, X-ray and electrocardiographic findings were within normal limits. It was decided to give her metrazol shock, in spite of the fact that many of her symptoms were somatic in nature. Her reactions were more severe than average. The first five treatments were definitely successful, and following the fourth there was a noticeable improvement in the mental state. The sixth was more severe, and there was heard a grinding, crushing sound in the pelvis. X-ray showed that the head of the femur had been forced through the acetabulum into the pelvic cavity about two inches. She was placed in the appropriate cast for reduction. Despite the trauma and the cumbersome appliance, she was much better for about two weeks, then relapsed gradually into her former state. At the end of the third week after the trauma occurred, she was in the same state as at the time of her admission, and it was decided to try the same procedure which had been so successful in the case of W. C. She was given 12 subconvulsive doses on alternate days, but there was no change in her clinical picture. She would not attempt to walk, made no effort to help herself in any way, and complained bitterly and constantly of the same symptoms she had displayed at the time of admission. The subconvulsive treatments were discontinued May 30. It was felt that metrazol would bring about a favorable outcome in this case if the full shock treatments could be given. This conception was based upon the improvement shown during the first series before the trauma. It was about this time that the original article on the use of spinal anesthesia was published. After a conference with the family, it was decided to use this procedure to immobilize the lower extremities and to proceed with the general reactions. She was given five shocks, being prepared before each with spinal anesthesia. Following the third she began to walk with the aid of a chair, and following the fifth in this series she seemed to have completely recovered from her mental symptoms. The treatments were given at intervals from 4 to 7 days. She received the last

July 7. She remained in the hospital until August 3, 1939, for physiotherapy and reeducation, and was discharged on that date apparently recovered with respect to her mental state, and with about a 50 per cent return of hip function.

Case 5. W. C., white male, age 53, was admitted March 11, 1939, with a chief complaint of "loss of confidence." The onset came three years before admission, following a long period of intensive work. He took no interest in anything and refused to see his old friends. He would not leave the house, nor would he help with the chores about the yard. He would sit for days, repeating when urged to do something: "I am not good for anything." He lost 100 pounds during his first year of illness. He had shown some slight improvement during the past two years, but his symptoms were still intense. Examination revealed a man who was abnormally quiet but cooperative. He was depressed, and seemed on the verge of tears. Unlike the other three patients, he showed no restlessness, agitation or confusion. He slept well at night, and his appetite was relatively good. Physical examinations, laboratory studies, roentgenograms and electrocardiograms were within normal limits. Metrazol convulsive shock was advised. The first reaction was satisfactory, but the patient complained bitterly of the left shoulder following the convulsion. X-ray examination revealed a compression fracture of the head of the humerus. An airplane splint was applied, providing the proper traction. In spite of the trauma and the necessity of wearing a cumbersome appliance, he was much better for several days. However, he soon relapsed into his former state. The orthopedic consultant advised that it would be many months before convulsive shock could be renewed safely, but he felt it might be given with little danger while the appliance was in place. It was decided, however, to try first some subconvulsive doses. Daily subconvulsive treatments were started four weeks after the fracture. He received 14. Suggestion therapy was applied during the apprehensive state, and he made a steady and uneventful recovery. However, the seventh treatment resulted in a generalized convulsion. The orthopedic appliance was on the upper arm in full traction, one of the assistants holding the arm firmly throughout the convulsion. He complained of no ill effects, and radiograms showed no change in

the position of the bony parts. He was discharged April 30, 1939 to return home. His condition since then has been good and he has slowly improved. He has taken a great interest in his yard and garden, has called upon many of his friends, and has carried on a regular correspondence with members of the hospital staff. These are the first letters he has written in three years. His shoulder has attained about a 70 per cent return of function. He gained 20 pounds in weight in the first three months after his return home.

Discussion

The writers have presented this series of cases to show that metrazol convulsive shock may be given to patients with severe physical disabilities. The cases were all of long standing, and had a hopeless prognosis without shock therapy. The families were acquainted with the facts of the cases and the risks of treatment, reaching themselves without undue urging the decision for this therapy to be given.

The results justified the risks. All five patients, with the possible exception of number 3, made a complete "recovery" from their symptoms. Psychiatrists should approach these problems with the same faith and courage that the surgeon exhibits when he is faced with a condition requiring a major surgical operation to bring about recovery in a patient who is a poor operative risk. It is realized that complications will arise and that patients will die from this procedure, but if chances of recovery are carefully weighed against chances of accident, there can be only one decision in patients such as those described above.

It is recognized that the strain upon the heart is severe during these treatments. Evidences of mild decompensation have been seen in several cases. One patient, not included in this group, had a rather marked temporary cardiac breakdown during the course of the therapy. However, a general surgical operation places considerable strain upon a weak heart. If the more advanced knowledge of internal medicine is followed, the heart being supported by every known means, metrazol convulsive shock can be used in the face of chronic heart conditions which are well compensated.

On the other hand, the presence of arteriosclerosis would not seem to be a contraindication. In addition to the above-mentioned patients, four of whom were over 60 years of age, the writers have treated four individuals over 60, making a total of 8, all of whom by inference should have had arteriosclerosis in the brain. It is recalled that Wartman[15] found in 500 successive autopsies that 90 per cent of the men and 85 per cent of the women over 60 had cerebral arteriosclerosis. None of the patients here studied at any time showed ill effects which could be attributed to the development or advance of cerebral pathology. This is a rather small group, and future cases may show some complications of this type, but from the present results and experience the writers do not consider simple cerebral arteriosclerosis a contraindication.

Glucose was used intravenously in these patients for two reasons. First, it supports the heart. Sprague and Camp,[16] Smith and Luten,[17] Meyer,[18] and others have reported a beneficial effect from intravenous glucose in myocardial disease. Secondly, one of the writers[19] has observed and reported upon the use of intravenous glucose infusions (10 per cent) in the acute confusional states of old age. They have found it to be almost specific in those cases presenting a clinical picture which is delirious-like in symptom content. All patients who present confusion or evidence of dehydration and malnutrition, with accompanying physical evidence of a toxic delirious process, receive a course of glucose infusions at this hospital. Marked clinical benefit is to be expected, and the patient is prepared for metrazol convulsive shock if it becomes apparent that there is a malignant "functional" psychosis, upon which the confusional state has been superimposed.

Structural defects of, and trauma to, the bony skeleton demand ingenuity in order that they may be circumvented and therapy allowed. But the clinician can do so if he will not adopt a defeatist attitude when faced with one of these complications.

Conclusions

1. Metrazol convulsive shock may be given in the face of serious physical disorders involving the heart, the blood vessels or the bony skeleton.

2. The results of treatment are as good in patients with physical disorders as those to be expected in patients who are apparently structurally and anatomically sound.

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THE FORCE REQUIRED TO CRUSH VERTEBRAE: ITS PROBABLE MECHANICAL RELATION TO THE POSTMETRAZOL FRACTURE*

BY WILLIAM FURST, M. D.

The initial enthusiasm for the metrazol shock treatment of psychoses has subsided since the reports of complicating vertebral fractures. The literature does not explain the high incidence of this otherwise rare fracture. The following factors may be etiologically related:

1. A constitutional factor[1]
2. Age and sex variations[1]
3. The chemical action of metrazol on bone
4. Disturbance of calcium-phosphorous metabolism
   (a) Nutritional deficiency[1]
   (b) By muscular contraction[2]
   (c) By endocrine stimulation producing transient hyperparathyroidism[1]
5. Variation in blood supply to the vertebra
   (a) By vascular compression
   (b) By stimulation of the autonomic nervous system producing vasoconstriction

This paper attempts to evaluate the probable significance of the mechanical factors in the production of the postmetrazol vertebral fracture.

The peculiar anatomical nature of the thoracic spine[3] may explain the frequency of fracture of the fifth, sixth and seventh thoracic vertebrae. The natural convexity of the thoracic vertebrae is somewhat increased by the thoracic intervertebral disks, which in this region are slightly narrower in front than behind.[3] Mobility of this region, moreover, is limited to 90° in flexion and only 40° in extension (in the cadaver). The flexor muscles of the spine (the rectus abdominis, sternocleidomastoid, scalenus anticus, abdominal obliques, psoas major and minor, longus colli and capitis) therefore apparently have a definite mechanical advantage over the exten-

*Presented before the Philadelphia Neurological Society, February 23, 1940, at the College of Physicians and Surgeons, Philadelphia, Pa.

sors (the sacrospinalis, quadratus lumborum, semispinalis, longissimus dorsi, multifidus, rotatores, interspinales and splenius).

Reed and Davis[4] believe that, since there are few muscles extending the thoracic spine, generalized severe muscular action produces extension of the cervical and lumbar spine with flexion and angulation of the thoracic region resulting in localization of the postmetrazol fracture to the latter area. Their radiologic studies reveal a surprising similarity in the incidence between postepileptic and postmetrazol-insulin vertebral fractures. Table 1 illustrates their data.

TABLE 1

"Idiopathic" Epilepsy Group	
Number examined	72
Percentage with compression deformity	34.2
Percentage of males	46.8
Percentage of females	24.5
Metrazol—Insulin Group	
Number examined	86
Percentage with compression deformity	31.4
Percentage of males	50.0
Percentage of females	18.0

Midthoracic fractures also occur occasionally in tetanus.[5]

The compression force which a vertebra will withstand is probably a major factor in its resistance to fracture. The pressure necessary to crush the fifth thoracic vertebra was determined by the following method: The body of the vertebra was removed with an electric saw, fleshed and placed in formalin. The intervertebral cartilage was separated, the vertebra dried and placed under an electrically controlled press capable of measuring pressure variations within five pounds. The load was applied to the flat surfaces of the vertebra. As the pressure increased to 250-275 pounds, a cracking sound occurred. At this point, the bone appeared flattened and the periphery of the superior and inferior borders of the ventral margin was separated from the body (Fig. 1). As the load gradually increased to 750-800 pounds, the vertebra cracked apart transversely. The trabeculae also appeared crushed, although the two parts retained their shape.

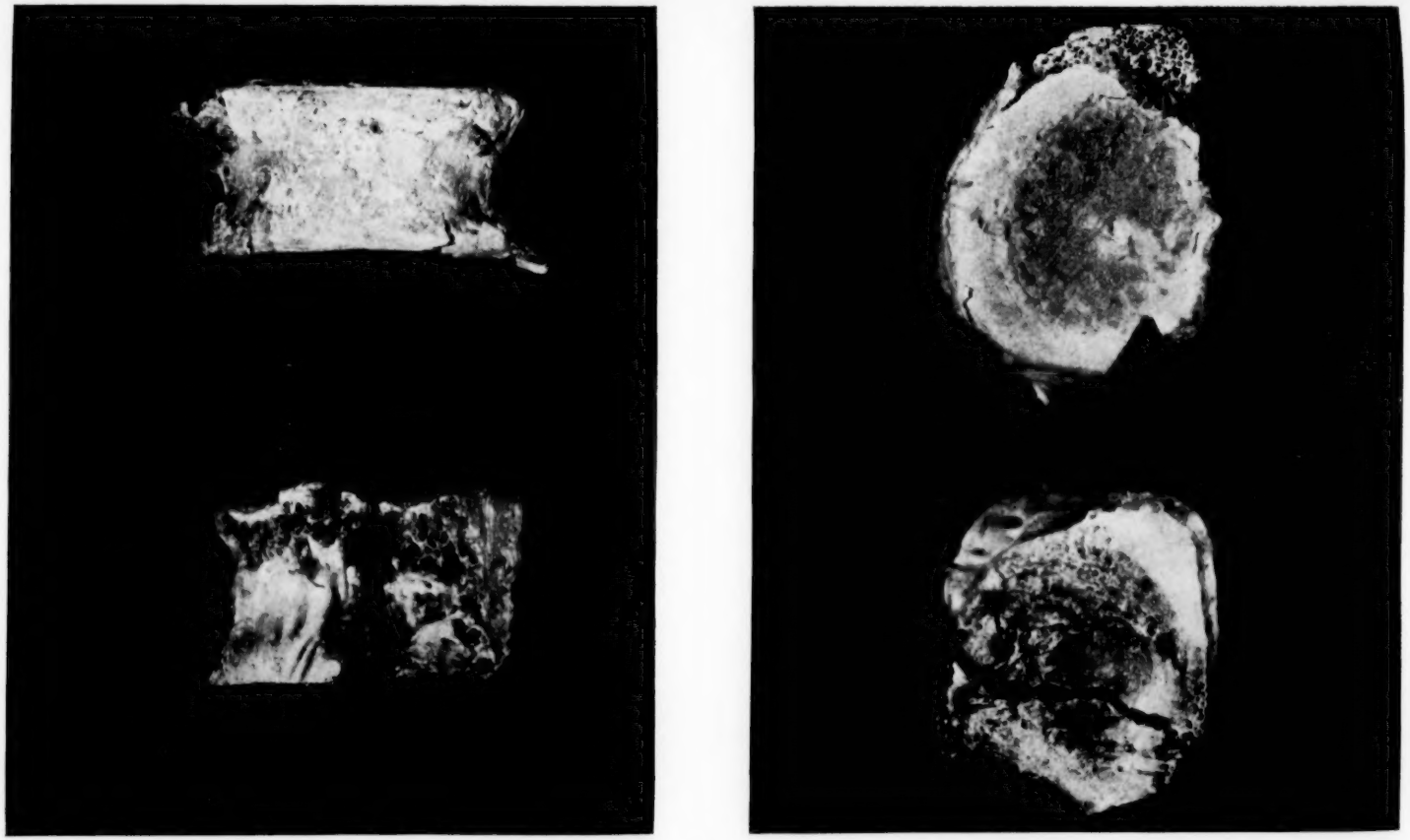

Fig. 1. The appearance of vertebrae following experimental mechanical compression.

A—Ventral view. The upper vertebrae was subjected to 250 pounds, the lower to 780 pounds pressure

B—Superior aspect of the same vertebrae

The results of two experiments are charted in Table 2.

TABLE 2

Patient	Sex	Age	Flattening load	Crushing load
1. A. R.	M.	28	250 pounds	750 pounds
2. J. W.	M.	56	275 pounds	780 pounds

Although the method of preparation of the vertebrae and the circumstances of this experiment are subject to criticism, one fact appears significant, namely: The fifth thoracic vertebra when longitudinally compressed will be crushed at the peripheral portion of its superior and inferior ventral margins by a force approximately one-third that required to crush the body.

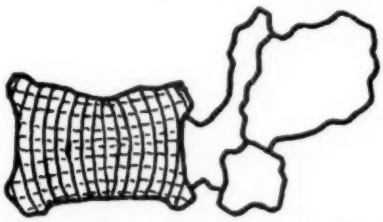

Fig. 2. Vertebral body in cross-section, showing the bony structure. (Transcribed from Morris' *Human Anatomy*, p. 105)

The unique construction of the vertebral body[3] may be partly responsible for the wedge-shaped nature of the postmetrazol fracture. It is evident from Fig. 2 that the trajectories described by the trabeculae of the vertebrae are prone to disruption at their centers when the vertebra is subjected to a longitudinally compressing flexion force. The midpoint of the ventral border of the vertebral body in its transverse axis is therefore its weakest portion.

The study of the metrazol convulsion by Strauss, et al.,[6] utilizing high speed motion pictures, reveals the fact that the seizure is tripartite: a 10-second clonic stage, a 10-second tonic stage and a second clonic stage of 30 seconds duration. This study probably indicates an important factor in the postmetrazol fracture, which may best be illustrated by analogy with the engineering aspect of the problem of bridge construction. In computing the strain tolerated by a bridge, allowance must be made not only for the total load of 100 soldiers but also for the increased force incident to the

recurrent impacts of their marching. The compression load placed upon a vertebra likewise seems of less importance than the recurrent impacts of the clonic-tonic-clonic convulsion.

The fate of the intervertebral disk in the pathogenesis of the postmetrazol fracture has received scant attention. Tureen and Key[7] suggested that, due to direct longitudinal pressure on the vertebral bodies, there is relatively slight tendency to wedging but the intervertebral disk may be forced into the bodies of the vertebrae. Of 15 cases of fracture of the thoracic vertebral bodies (T ix to T xii) from external trauma, Olin[8] observed compression of the intervertebral disk in 86 per cent. The commonest result of this complication was the invasion of the prolapsed nucleus pulposus of the disk into the spongiosa of the vertebral body forming a Schmorl's node. Rathmell[9] confirmed this finding histologically in a case of postmetrazol vertebral fracture. Posterior protrusion of the intervertebral disk into the spinal canal following this type of fracture, although not yet reported, should be anticipated.

The necessity for maintaining spinal hyperextension is therefore emphasized by these observations. Counterpressure against the hyperextended spine probably offsets a compression force between 250 and 750 pounds. This may prevent crush fracture of the vertebral body, fracture of the periphery of the superior and inferior ventral margins, or injury to the intervertebral disk. It is probable that pressures of about 250 pounds are related to the group II type, and pressures of about 750 pounds to the group IV type of postmetrazol fractures as classified by Rathmell.[9]

At the Norristown State Hospital, the author has utilized a simple but efficient means of maintaining spinal hyperextension. The patient is placed upon a flat table with hyperextension increased by a small pillow under the midthoracic spine, and counterpressure exerted by assistants against the chin, shoulders, hips and knees. By this method, it has been possible to reduce the incidence of vertebral fractures to 8 per cent in 37 consecutive cases. Graves and Pignataro,[10] using a similar means of restraint, have reported the same incidence in 187 cases. This is considerably less than the reported percentages of: 20,[11] 43,[12] 47[13] and 50.[9]

Summary and Conclusions

1. Several related factors probably explain the high incidence of postmetrazol vertebral fractures.

2. The relation of mechanical factors to the production of the fracture is confirmed.

3. The peculiar anatomical nature of the thoracic spine with its limitation in extension may explain in part the mechanical advantage of the spinal flexor muscles.

4. The postmetrazol fracture of the thoracic vertebral body is probably as frequent as that following epileptic convulsions.

5. It is found by direct measurement that the fifth thoracic vertebra, when longitudinally compressed, will be crushed at the periphery of its superior and inferior ventral margins by a force approximately one-third of that required to crush the body.

6. The unique construction of its trabeculae may predispose the vertebral body to a wedge-shaped deformity.

7. The compression load placed upon a vertebra seems of less importance than the recurrent impacts of the clonic-tonic-clonic convulsion.

8. Compression of the intervertebral disks following fracture of the thoracic vertebral body may occur in about 86 per cent of cases. Invasion of the prolapsed nucleus pulposus of the disk into the spongiosa of the vertebral body, resulting in the formation of a Schmorl's node, has been demonstrated.

9. The necessity for maintaining spinal hyperextension in preventing postmetrazol vertebral fractures and intervertebral disk complications is emphasized. Its use may result in a reduction of fractures from 50 to 8 per cent.

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ALCOHOLISM, ITS FREQUENCY, ETIOLOGY AND TREATMENT*

BY WILLIS A. STRONG, M. D.

Frequency

Alcoholism has been a social problem to serious-minded men down through the ages. It has been a subject of much debate, and its solution has been attempted by the church, the politician and others without satisfactory results. Many physicians in the past have preferred to assume the "hands off" attitude in alcoholic cases. However, beyond therapeutic considerations, with the increasing number of automobile accidents involving the question of intoxication, the physician is called in more and more frequently by civil authorities to deal with the medicolegal aspect of these cases. More recently, many psychiatrists have done considerable work in an attempt to better understand and treat the alcoholic individual.

The part played by alcohol in the production of mental disorder is difficult to define conclusively. Forel[1] declares that in all countries alcohol is responsible for as much as 30 per cent of the admissions to mental institutions. Statistics[2] indicate that about 12 per cent of the psychoses in the United States are dependent upon alcohol as an etiological factor. The percentage of patients in New York civil State hospitals labeled with "alcoholic" diagnosis is approximately eight. However, any such figures may be misleading with respect to the total effects of alcohol, because it is evident that alcoholism is a factor present in many cases of schizophrenia, and in manic-depressive and luetic psychoses. In the feebleminded, alcohol tends greatly to exacerbate antisocial tendencies. Furthermore, a considerable number of minor mental conditions precipitated by alcohol do not reach mental hospitals, yet are responsible for many of the sexual crimes, homicides and attempted suicides.

Racial and regional factors in relation to alcoholism are only suggestive. It is stated[1] that alcoholism is infrequent among the Jews, but their mental morbidity rate is as high as that of most races. Seaport, mining and manufacturing communities have a higher ratio of alcoholism than inland and agricultural communities.

*Presented at the interhospital conference held April 28, 1939 at the Utica State Hospital, Utica, N. Y.

During the early years of prohibition, there was a decrease in the number of alcoholic patients admitted to, and confined in, the mental hospitals of New York State. Since that period, both these groups have shown a yearly increase which is demonstrated in the tables below. The largest number of admissions, over 60 per cent, occur in the age group between 35 and 55 years.

The total number of alcoholic patients in New York civil State hospitals in various years was as follows:[3]

June 30, 1918	1,740
June 30, 1923	1,473
June 30, 1928	1,798
June 30, 1933	2,190
June 30, 1938	2,698

The number of alcoholic patients admitted to New York civil State hospitals over the same period was as follows:[3]

	First admissions	Read-missions	Total
June 30, 1918	354	70	424
June 30, 1923	276	60	336
June 30, 1928	509	87	596
June 30, 1933	706	123	829
June 30, 1938	831	238	1,069

Etiology

The infant is ushered at birth from dark, warm surroundings into a light, cold and uncomfortable environment. He longs to retreat again into darkness and warmth. His nearest approach to this desire is effected by the ingestion of milk which gives him a feeling of warmth and satisfaction, followed by darkness reached through sleep. Only gradually does he have to adjust to the world around him. As the infant grows into a child, other foods are added to his diet and, with the advent of teeth, he is given solid foods. He proceeds from the oral liquid to an oral solid stage of development. If the child has not been satisfactorily weaned by the time he is two years of age, his future is beset with many unforeseen dangers. This transition from oral liquid to oral solid stage of nutritive ingestion plays an important part in the development of the future alcoholic. The alcoholic appears to be more or less fixed at this oral liquid stage of existence in his emotional development. When he escapes by regressing to periods of excessive alcoholic indul-

gence, he wants his alcohol "uncontaminated" by solid food. It is only when he is relatively happy and contented that he indulges in overeating rather than overdrinking.

The individual who has developed to the oral solid stage is the one who sublimates his instinctive urges with solids in place of fluids. He may occasionally enjoy alcoholic beverages, but prefers to have solid foods with them. Having reached a higher level of integration both physiologically and psychologically, he is much more stable and dependable than the alcoholic.

Alcohol produces in the adult much the same effect as milk produces in the infant. In moderate amounts, it brings about a feeling of warmth, while further alcoholic indulgence leads to drowsy stupor, forgetting of difficulties, and finally sleep. Throughout the ages alcohol has been the most popular and satisfying anesthetic for psychic pain.

Many types of persons drink, and their reasons for drinking are numerous and varied. Many factors of a social or economic nature may be concerned in the production of this habit, but in the pathological drinker there is another, less evident, but more malignant etiological factor which may be termed "personality inadequacy."

Alcohol effectively narcotizes the consciousness of conflict. A state of mild intoxication inhibits fear. Whether in social circles or in business activities, these individuals feel naturally timid, bashful and inferior, but when they have imbibed a few cocktails, they feel as much at ease as anyone. Some individuals drink to achieve a sense of well-being, and only when intoxicated feel content and equal to facing reality. Such persons will work all week, often at some task of drudgery, for the sake of the Saturday night bacchanal when they can enjoy a few hours of pleasant release. Some of them drink because of the intrinsic charm alcohol has for them, so that intoxication becomes a part of their daily life experience. Some drink as an escape from incurable physical pain, while still others develop the habit as a result of disease, injury or other conditions such as arteriosclerosis and senility. They acquire alcoholism as a sort of drug habit characterized by a chemical craving in the absence of the drug. There is a group of patients who drink because they are psychotic. This is frequently illustrated in early cases of paresis, schizophrenia and manic-depressive psychosis. On

the other hand is the group of purely alcoholic psychoses showing mental deterioration and other symptoms resulting from habitual indulgence in alcohol. The writer shares the belief that the greatest factor in the etiology of alcoholism is an attempt to flee from reality. When these individuals want to shrink from difficult situations, disappointment, anxiety, depression, worry, or feel they are unable to face life situations, they find alcohol a ready means of escape. From this point of view, alcohol is an agent which breaks down sublimation and permits regression. The drinking of alcohol is, therefore, a concession to the inner urge to regress, so that the acute alcoholic psychoses are more properly considered of psychic than of toxic origin. Strecker[4] describes alcoholic persons as emotionally immature, introverted and neurotic. He adds that 90 per cent of the alcoholics coming voluntarily for treatment are introverted, which is rather startling in view of the general conception that the average drinker is jolly, sociable and popular. He further substantiates this idea by maintaining that the neurotic drinker is an insecure and self-critical individual desperately trying to extravert himself. It is significant that among the bodies of alcoholics that come to autopsy, in general hospitals a considerable number are found to have cirrhosis of the liver, while in the mental hospitals this condition is of rare occurrence. This would suggest again that the alcoholic psychoses are dependent upon some peculiarity of the individual's makeup which is affected in an exaggerated way by alcohol. Many articles have appeared in recent literature concerning alcoholism as a problem of allergy. This is a likely possibility, but the subject is still debatable.

Treatment

Although there is no specific cure for alcoholism, the symptoms in the acute varieties can be treated and cured, and the patient given a fresh start. In the more chronic forms, the prognosis is becoming more hopeful with the institution of more careful and prolonged treatment. However, it must be conceded that many of the far-advanced cases are beyond correction. Recent reviews of the literature on the subject of delirium tremens mention various therapeutic measures as being particularly beneficial in shortening the period of acute excitement and hallucinations, as well as in reducing

the mortality of the condition. In 1911, Ransom and Scott[5] reviewed the medical treatment of delirium tremens and reported mortality rates as high as 37 per cent. Hogan[6] in 1916 reported 9.3 per cent mortality. His treatment consisted of intravenous hypertonic solution of sodium bromide, sodium chloride and sodium bicarbonate, calomel and magnesium sulphate by mouth, and intravenous glucose. Sajour and Hundley[7] reported a series of cases in 1936 treated with continuous baths, showers, saline cathartics, restraint and massage with 9.7 per cent mortality. Recently Piker and Cohen[8] reported a 5.3 per cent mortality with the use of digitalization, spinal drainage, intravenous dextrose and chemical sedation. Cline and Coleman[9] believe that increased spinal fluid pressure is intimately related to the cause of delirium tremens, and treat the condition by spinal drainage, intravenous dextrose, magnesium sulphate and paraldehyde by mouth with limitation of fluid intake. They report a 3.8 per cent mortality. Gregg[10] stresses the use of hydrotherapeutic measures, but offers no statistical data. Bell and Talkington[11] recently published an article on the study of 112 consecutive admissions to the Taunton State Hospital, Massachusetts, diagnosed delirium tremens, which were treated principally by hydrotherapy with a resultant mortality rate of 4.4 per cent. The schedule of treatment consisted of complete withdrawal of alcohol, saline cathartics to promote elimination, and cold wet sheet packs to secure rapid sedation during the period of acute excitement. The patients were retained from three to four hours in these packs, the process being repeated until the excitement diminished. Patients in a febrile condition were not subjected to the pack treatment because of the danger of heat exhaustion. After the acute excitement began to subside, they were placed in a neutral continuous bath at a temperature ranging from 93° to 96° F. The bath was from three to four hours in duration, and could be administered repeatedly. The sedative action here is slower and more prolonged. In both the wet pack and continuous bath, the patient's head was kept somewhat elevated, and cephalic cold was applied intermittently. This, according to Kennedy and Wortis,[12] aids in reducing the intracranial pressure. As soon as the patient was free from delirium, electric light baths were used as an added means of promoting elimination. This was followed by a needle spray and fan

douche which stimulated the patient's appetite, his feeling of well-being, and produced a general tonic effect. A liberal high caloric diet was administered. As soon as continuous bath treatments were no longer necessary, the patients were introduced to supervised occupational therapy and later to outdoor exercises and other activities. Digitalis was administered only when a cardiac condition supervened. Chemical restraint was seldom used, and it was felt that satisfactory results were obtained without resorting to lumbar puncture as a routine procedure.

White[13] states that the treatment of delirium tremens and other acute alcoholic psychoses should consist of concentrated foods, keeping the bowels freely open and the kidneys well flushed. In some cases heart stimulants are necessary to combat cardiac failure, and hypnotics to induce sleep and give rest. Hydrotherapy in the form of continuous bath is valuable especially for quieting the excitement. He stresses the need for giving the patient sufficient food from the start, and recommends tubefeeding if the patient fails to eat properly. He states that food alone will often ameliorate in a remarkable manner the excitement and the insomnia.

In chronic alcoholism, the medical treatment should be tonic and supportive. Strychnine as a general nervous and cardiac stimulant, tonics for anorexia, and a well-balanced diet with sufficient vitamins should be employed. Moderate exercise, baths, massage and electricity are helpful because of their tonic effects. Sedatives and hypnotics should be used with caution. Later, sufficient mental and physical exercise should be introduced to keep the patient healthfully occupied. Most cases showing marked deterioration, or well-established Korsakow's psychosis, require continued hospital care and treatment.

Reifenstein[14] published an article last year on the treatment of alcoholic psychoses with benzedrine sulfate in which he claimed improvement in 93 per cent of a series of 28 cases. The most striking improvements occurred in the acute forms, while in cases of chronic hallucinosis and Korsakow's psychosis the results were less gratifying. In states of intoxication without psychosis, this drug produced rapid and marked results. The characteristic symptoms of a "hangover" usually disappeared within an hour or two after a single morning dose of from 5 to 10 mgm. The use of ben-

zedrine sulfate should be limited to institutionalized patients because of the dangers of possible toxic effects and its danger as a habit-forming drug.

Also worthy of note is the fact that many of these patients have secondary anemias and are greatly benefited by injection of liver extracts and the oral administration of iron compounds. When vomiting and diarrhea are marked, intravenous injections of 50 per cent glucose are advisable. This also helps to relieve intracranial pressure through the osmotic effects of the hypertonic solution. As a rule, lumbar puncture is not necessary unless convulsions have occurred. Neuritis is not due directly to the effects of alcohol, but the alcohol affects the patient's appetite for solid food, consequently his vitamin intake is low and the neuritis arises from lack of these necessary substances, especially vitamin B. Treatment, therefore, should consist of vitamin B medication as well as giving foods rich in vitamins.

The matter of isolation in the treatment of alcoholism is most important, even imperative for those patients in whom the habit has become firmly fixed. Such patients are unable to resist temptation, but after a few months without alcohol in a hospital they have improved and are in condition to abstain, if they wish. They at least have been given the best possible opportunity to start on the road to nonalcoholism.

Except in the far-advanced and obviously hopeless cases, psychotherapy offers promising results. This treatment can be carried out to best advantage during the period of isolation. Beyond this period, however, it is wise to insist on continued but less frequent treatments. Such interviews afford the patient the opportunity of unloading or expressing his difficulties to an interested and understanding individual, and of receiving reassurance relative to his future mental health.

Treatment should begin by definitely informing the patient that the goal is total abstinence. His family and friends should be made to recognize that an individual who has been a pathological drinker can never be a moderate or social drinker. He must understand the treatment is a long and difficult one requiring patience, determination and absolute honesty of relationship between patient and physician. If any of his antecedents have been alco-

holic, he should be assured that he need not also be alcoholic because of this.

Each case must be handled as a separate problem. An investigation should be made into the patient's life history and the material thus obtained used as an aid in determining why each particular alcoholic drinks. The best therapeutic approach to his underlying difficulties must then be formulated.

The patient who comes with an honest desire for help should be approached with sympathy, kindness being employed in an effort to eradicate in him any ideas of punishment, fears of failure or attitudes of inferiority. The tact of the psychiatrist in presenting to the patient the liabilities of his makeup is extremely important. The psychiatrist should be of the understanding and tolerant type. Furthermore, it has been stated[15] that "a physician who is a total abstainer will achieve better results than a physician who has one attitude for himself and another for his patients. The total abstaining physician carries much more conviction in his advice and exerts a stronger suggestive influence." The wife, husband, or other members of the family, should be interviewed and given some insight into the patient's assets and liabilities, as their attitude toward the patient is extremely important. Their tact and diplomacy in handling past and present situations and their intelligent cooperation in planning new activities are major therapeutic aids.

It is wise to have the patient avoid unnecessary opportunities for drinking. He should be assisted in outlining a recreational program and developing interest in new hobbies, diversions, club activities, etc.

The theory that alcoholism is an allergic manifestation, or that its victims have developed a distinct sensitivity to alcohol, may be utilized advantageously in explaining to the patient his reaction to alcohol. This psychobiological sensitivity is compared to the physical allergy in asthma; it is explained to the patient that, due to his sensitivity, the asthmatic keeps away from ragweed; and in the same way, the alcoholic patient should avoid alcohol. This is a distinct aid to therapy, as it gives the patient an understandable reason why others can "handle" alcohol and why he cannot; also, that feeling of not "being a man" is taken away.

Summary

1. Alcoholism is a problem still unsatisfactorily solved. In the mental hospitals of this country, alcoholics constitute in the neighborhood of 10 to 12 per cent of the total population, and the number of alcoholics admitted to state hospitals is increasing each year.

2. With respect to the cause of alcoholism, a few cases appear to be "pure" alcoholics, but it is believed that most alcoholics are alcoholics because of some preexisting psychobiological or psychopathological inadequacy. In the acute forms, the aims of treatment are to maintain the patient's strength and vitamin intake, to alleviate the excitement, to procure sleep and to promote free elimination. In all forms, complete withdrawal of alcohol is essential. Psychotherapy affords the best possibilities for recovery and should include a study of the patient and an attempt to educate him in replacing his weakness with whatever assets he may possess. Far-advanced cases require continuous hospital care.

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THE INVOLUTIONAL PSYCHOSES

*Prepsychotic Personality and Prognosis**

BY MARY F. BREW, M. D., AND EUGENE DAVIDOFF, M. D.

The clinical features of "involutional melancholia" have been described in detail by McCurdy,[1] Henderson,[2] Strecker and Palmer,[3] Henderson and Gillespie,[4] White[5] and Bleuler.[6] In 1925 one of the present authors[7] mentioned the importance of the schizoid personality in a study of the etiological factors. Henderson discussed the concepts of Dreyfus and Kraepelin.

A difference of opinion still exists as to whether the "involutional group" may properly be classified with the agitated depression, or whether it is a separate entity. Recently Titley[8] stated that the agitated depressions and involutional psychoses are identical, with respect to prepsychotic personality and clinical features. He describes the narrowed interests, the difficulty in reacting to change, and the unfriendly attitudes observed. He suggests separation of the agitated depressions from the clear-cut manic-depressive depressions. On the other hand, Strecker and Palmer, and Palmer and Sherman,[9] note the rigidity of persons developing involutional melancholia, but imply that this psychosis differs from the agitated depressions. In addition, in their excellent contributions they have extensively reviewed the literature, including the concepts of the psychoanalytic school. Werner,[10] as well as Hawkinson,[11] has described the cardinal symptoms in the climacterium of those without psychosis. In the nomenclature approved by the American Psychiatric Association, this group is designated "involutional psychoses." It is listed as a subdivision of psychoses due to disturbances of metabolism, nutrition or endocrine function. Two types are described, the melancholic and the paranoid.

The controversial points raised by others center upon the influence of the prepsychotic personality, the endocrinological (especially estrogenic) factors, and the effects of the involutional period *per se* with special reference to the psychologic changes occurring in this period. Do these psychoses appear exclusively in rigid personalities? Are they due entirely to hormonic alternations? Are they peculiar to the involutional period? Is there a single entity

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in the involutional psychosis? Is there a group of symptoms referable to the involutional period? Are they delayed or latent schizophrenias? Are they recurrent or late-appearing manic-depressive reactions, or are they prolongations of severe psychoneurotic reactions? It is doubtful whether these questions can be answered satisfactorily, particularly in regard to the schizophrenic reaction types.

Severinghaus[12] has stated that the manifestations in the menopause are so varied in type that one is tempted to attribute to the climacterium any complaint without obvious cause which is made by a woman in the fifth or sixth decade. He has also advised the use of large doses of estrogens, but recognizes the importance of psychotherapy.

Gynecologists[13, 14] have been divided in their opinions concerning the influence of the personality in the mild symptoms manifested in the menopause. Some texts state that the mild as well as the malignant symptoms occur in predisposed individuals. Others believe that the atrophic gonadal and genital changes, the pituitary, adrenal and thyroid influences and the autonomic functions are responsible. The artificial menopause and castration syndrome is thought by some to exhibit symptoms more or less identical with the real menopause, although this has not always been the experience of the writers.

It would seem, from the scant mention which the involutional syndrome has received in gynecological and medical texts, that until recently the approach to these early cases has been almost entirely gynecologic and endocrinologic, the psychiatric aspects having been more or less disregarded. This attitude is epitomized in Hawkinson's contribution of July, 1938.[11] One thousand consecutive patients were treated with concentrated estrogens. He admits that the precise mechanisms by which symptoms are produced is not fully known, but mentions as etiological factor the endocrine imbalance in this period and its effect on the autonomic nervous system. He used as much as 10,000 international units of estrogen in oil daily in 14 cases of involutional melancholia, which he characterizes as a condition associated with the menopause. Twelve cases are reported to have made complete recovery. One of the patients who did not respond was considered to have schizophrenia.

Hawkinson further states, "There is no question that psychotherapy and sedatives are of some value in the treatment of the menopausal syndrome. However, their value has been too highly regarded. Few patients were given psychotherapy. The limited value of psychotherapy and sedatives is demonstrated when estrogen is discontinued."

He continues with the statement that insufficient therapy is often worse than no therapy at all and accounts for the failures reported. The work of Severinghaus, Werner, Mazer and Israel, and Frank and his associates is reviewed in this connection. According to this résumé, many internists seem to believe that the involutional syndrome can be explained and treated on a purely endocrinologic basis. Small doses of estrogens are condemned because of their stimulative effect. Large doses are recommended because of their value as substitution therapy.

Davidson[15] has reported successful results in women with moderade doses of Theelin in what he calls the involution (mental) syndrome. Schube,[16] et al., are skeptical concerning the efficacy of Theelin. Werner[10] states that testosterone is effective in the treatment of male climacterium, while Barahal[17] found it of little value in 5 cases.

To return to the psychiatric viewpoints, we note that McCurdy[1] stressed the psychologic concomitants of this period and described the emotional and total personality characteristics encountered in these psychoses. He further attempted to align those cases exhibiting ridiculous delusions with the schizophrenic group. Others he considered as belonging to the manic-depressive reaction type or as a recurrence of a manic-depressive psychosis. He mentioned two other types, one with apathy and hypochondriasis, the other with fear of impending death or poverty.

Henderson[2] states that Kirby distinguished four main groups: (1) simple anxiety; (2) anxiety with fear, perplexity and allopsychic "concepts"; (3) cases with a somatic complex and feelings of unreality, and (4) cases developing arteriosclerosis. White[5] included the involutional psychoses in the presenile group. Manifestations observed in early Alzheimer's disease or cerebral arteriosclerosis do seem to parallel the symptoms seen in involutional psychoses.

Jelliffe and White[18] have stated that the mechanisms associated with involutional melancholia are acute loss or disappointment, narcissistic fixation on the love object with identification and marked ambivalence. The psychoanalytic school seems to regard involutional melancholia as essentially a narcissistic disorder. Regression, "genital loss," relinquishment of all adult strivings, turning to the loving parent, liberation of the early instinctive drives, as well as anal and obsessive tendencies, have been stressed. Alexander (quoted from Palmer and Sherman[9]), mentions the strife between the ego and the harsh superego. However, in the evolution of the psychosis, we were impressed by the fluctuations in the superego and the id, with the ego's attempt to maintain itself between these two changing forces. The id forces flare up frequently before they wane. The superego power is frequently lessened as the process continues. These two forces, derived as they are largely from the unconscious, would be more under the influence of the restrictive catabolic and conditioned reflex alterations occurring in this period.

The Prepsychotic Personality in Relation to Incidence and Prognosis

Much of current psychiatric opinion in regard to these psychoses centers upon two factors: (1) The influence of the early specific personality integration of the individual. (2) The influence of the climacterium and the later more general personality alterations associated with the involutional situation.

(1) *Influence of the early personality*

Life histories were reviewed of 176 consecutive cases diagnosed "involutional psychosis" at the Syracuse Psychopathic Hospital. These were studied from the standpoint of their predominating attitude in meeting life situations, as well as the integrative and adaptive qualities described in their biographical records. They were first divided into introverts and extraverts. These were then subdivided according to their integrative and adaptive qualities. Before this phase had been completed, the prognosis was independently investigated. Letters of inquiry were sent to Marcy and Willard State Hospitals, where the bulk of the patients were then

residing. Physicians and the social service department made further inquiries concerning the patients in the community. The prognosis was obtained without knowledge of the personality type, and the personality estimate without knowledge of the outcome.

TABLE 1

Total cases—176

Personality	Number of cases	Number of cases improved	Percentage of cases improved
Total extraverts	91	42	46
Total introverts	85	35	41
Mixed types			
Total mixed types	58	31	53
Predominantly syntoid. (Mixed manic in the Kraepelinian sense)	38	21	55
Predominantly schizoid but well adapted...	20	10	50
Pure types			
"Pure" extraverts	53	21	40
"Pure" introverts	65	25	38

TABLE 2

Total cases—176

Personality	Number of cases	Number of cases improved	Percentage of cases improved
Poorly integrated (including mixed and introverted types)	123	56	45
Poorly adapted (exclusive of well adapted introverts)	103	46	44
Well adapted (including well adapted introverts)	73	31	42
"Rigid" types	105	44	42

As indicated in Table 1, there were 91 extraverts and 85 introverts. There were 58 mixed personalities, 38 of whom were "mixed" in the Kraepelinian sense. The rather even distribution of personality types is further indicated by the fact that there were 53 more or less "pure" extraverts and 65 more or less "pure" introverts. Of the total of 176 cases, 123 were poorly integrated, 103 poorly adapted, and 105 of the "rigid" type. Seventy-three were well adapted. Of the 176 cases, 48 were males. These facts are illustrated in Table 2.

From the viewpoint of prognosis, there seemed to be little difference as far as extraversion or introversion was concerned. However, the mixed types appeared to have a somewhat better prog-

nosis. This might be accounted for by the fact that a few true mixed manics might have been placed in the involutional group. In 9 of the cases, the diagnosis had been changed at the State hospitals to "manic-depressive." In 10 of the 176 cases, a diagnosis of arteriosclerosis was preferred at the other institutions after prolonged observation. Another factor to be considered is that the mixed personality group may contain a combination of traits somewhat parallelling the normal personality in its admixture of introversion and extraversion, these traits depending for their adaptation on the satisfactory utilization of functions compensatory to the primary attitude. As seen in Table 2, there was little appreciable difference in the prognosis when the poorly integrated, poorly adapted and rigid types were contrasted with the well-adapted types.

In addition to the data contained in the tables, about half the patients revealed somatic components with a tendency to malnutrition and loss of weight. The physical components did appear to influence the prognosis. The "catabolic" significance of these concomitant somatic illnesses and malnutrition cannot be disregarded.

One of the important pitfalls to avoid in the specific personality estimation is the inclusion, in the biographical description, of the prepsychotic symptoms occurring in the long prodromal period preceding these psychoses. In this period, compulsive and anxiety states, rigidity, and a restricted range of interests frequently occur with depression. Each case must be carefully evaluated.

(2) *Influence of later personality factors*

The views of McCurdy,[1] the psychoanalytic school and others in regard to the personality aspects of this period of life have been mentioned previously,[2, 3, 9] and do not require repetition. That the climacterium influences the symptoms found in the involutional psychosis, finds confirmation in the following brief observations. The patients state that the future offers them little, the past is regretted, and as far as the present is concerned they feel no longer necessary. They are disturbed at the thought of becoming dependent, at their loss of security and attractiveness, at the futility of their sacrifice, at the feeling that they have nothing to offer, and at the physical defects which have appeared. Their plas-

ticity and energy for struggle is lessened; they seek to escape, as previously, from the various conflicts seeking expression, but feel hemmed in. It is further noted that they rebel at being superceded by the younger generation, particularly in the family constellation. Their first impulse is to continue to dominate or to attempt to destroy their progeny. Then, because of the waning of their aggressive traits and the reaction to this destructive idea, they develop feelings of anxiety and guilt, turning their algolagnia upon themselves. They find difficulty in adjusting to the changing world; they can no longer "push others" out of the way, and in the end punish themselves or blame the "outside world" for their difficulties.

Erotic tendencies, extramarital relations and sex deviations occur as a protest in this period. These are associated with their impotence, and later increase their sense of anxiety. In women, the last expression of the Diana complex is manifested. In this period, the last hope of creative or procreative effort dies and gives rise to the end of all illusions. The fluctuating conscious functions become powerless to combat the repressed conflicts of the past and the transitional present. Particularly is this so when a number of factors occur in combination and the environmental stresses increase.

There is a tendency for this psychosis to occur in individuals who are proud and independent, and who have taken too much responsibility; in those who have carried a heavy load all their lives, and cannot adjust to the restrictive influence of the climacterium and the physical restrictions placed upon their activities. Last, they cannot adjust to the somatic and endocrine changes natural to this period, and develop a superimposed neurosis. If there are points of arrest in earlier life, the regression may be more easily brought about. However, the involutional period itself is a regressive, catabolic phenomenon and may further be termed an era of diminution of the compensatory processes.

Case Material

Introvert—recovered

G. E. J., a male, was 63 years of age. All his life he had been shy and seclusive. He reached the seventh grade in school, leaving because he was not interested. He was frail and tired easily, working in a clerical capacity

for about 20 years. He has been married 20 years, and marital life is said to have been congenial. He has always been reserved with a circumscribed range of interests although efficient in his work. He was a poor mixer, and of the "complaining" type. About three months prior to admission to the Syracuse Psychopathic Hospital he had pneumonia, for which he was admitted to a general hospital. He made an uneventful recovery but remained thin and weak, became irritable, complained of headaches, said his bowels would not move, and that he would never feel better. On admission to this hospital, it was noted that he was somewhat untidy and negligent, showing evidences of an agitated depression. Beside a lack of spontaneity in speech, his responses were slow. He had delusions to the effect that he was no good, that his body was rotting away, that his stomach was closed off, that he was all burned up, that there was nothing left but bones, and that he had committed a great sin. He thought the nurses who attended him while he had pneumonia were against him. He continued to have these ideas of self-condemnation and these somatic delusions. He seemed discouraged, agitated, perplexed, and felt nothing could be done for him. He was committed to a larger State hospital, and a report from that hospital stated that, having made a satisfactory readjustment, he was discharged as recovered.

Introvert—unimproved

N. I., a male, 60 years old, was born in Italy. He had little education there, coming to the United States in 1921. He is married and has four children. A tailor, he has been unemployed for six years. He had no interests, rarely visited friends, but was considered to be a likeable person, although somewhat shy and lonely. He had had numerous somatic complaints for many years, liked to sleep, would sleep all day and then wonder why he did not sleep at night. In the hospital, he had many self-accusatory ideas and feelings of guilt. He said that he sold lottery tickets, and for this reason was being punished. He insisted he wanted to die since he was "no good." On the ward he was fearful, depressed, hopeless, anxious and somewhat perplexed. He felt he had to repent sins which he had committed. He showed a typical involutional reaction in the hospital. In view of the fact that he made no progress toward recovery here, he was transferred to one of the larger State hospitals, where he continued unimproved.

Extravert—recovered

B. L., a male, age 51, was born in Russia, coming to this country at the age of 12. He had been in the scrap-iron and metal business all his life. He was a good provider for his family and had done much toward caring for his younger brothers and sisters. He was described as energetic, rest-

less, ambitious, unable to relax. He had some recreation, but his business occupied most of his time. For a year prior to admission to the Syracuse Psychopathic Hospital, he had been upset and anxious. He expressed fear of impotence. Three or four times he hinted at suicide, became agitated and said he would be better off dead. In the hospital he was at first apathetic, depressed, retarded, uncommunicative, and required tube-feeding. Later he became agitated, tense and fearful. He made no progress and was committed to one of the larger hospitals. There, the diagnosis was changed to manic-depressive psychosis, mixed type, and he was discharged as recovered. Since this was a first attack in a man of 51 who showed a typical involutional picture, the writers preferred the diagnosis of involutional psychosis, melancholia.

Extravert—unimproved

C. S., a female, was 39 years of age. She was born in Italy and attended school there, coming to this country at the age of 20. Her childhood was uneventful, no abnormal attachment to either parent being noted. Following her father's death, she exhibited normal emotional behavior. She married at the age of 22, and marital life was said to be congenial. She learned English readily and acquired new habits easily, showing good personality integration in adapting herself to her new surroundings in this country. She was described as cheerful, pleasant, outgoing in temperament, having a host of friends and being interested in handiwork.

Onset of the psychosis occurred when she became pregnant, about nine months previous to admission. She had one child 17 years old, and there had been no pregnancies since that time. A Caesarian section was performed and she made an uneventful recovery, returning home in 14 days. About two weeks later she became excited, thinking she was to become a devil. She was depressed, threatened suicide, and developed hallucinations that the devil was after her. In the hospital she was anxious and depressed, having many nihilistic and self-accusatory ideas. She maintained an utterly hopeless attitude toward the future, with little insight into her changed condition. Despite the favorable personality development, she remained unimproved.

Mixed introvert—recovered

E. S., age 45, a widow, was born in New York State. She completed one year of high school, later becoming a practical nurse. She was always easy to get along with, having an even disposition. She was further described as being easily depressed, shy, conscientious, meticulous, generous and kind-hearted. In the summer of 1934, she became very tired and it was an effort for her to do any work. She was admitted in the early part of 1935

because she was becoming increasingly "nervous," worrying about her work and finances. In the hospital she was poorly cooperative, constantly expecting harm to come to her. She was tense, anxious and unhappy. Her trend was depressive and self-accusatory, with hallucinations in the auditory and visual fields as well as somatic delusions. She was convinced she had a terrible disease, and refused to get into bed or to sit comfortably at a table for fear of infecting others. She spoke of seeing men about the hospital who were spying on her. Throughout her hospital residence she showed a typical involutional picture and, since it was felt she would require prolonged care, she was transferred to one of the larger State hospitals. A recent report from that hospital states that she made an excellent adjustment and was subsequently discharged as recovered.

Mixed introvert—unimproved

B. A. was a 54-year-old woman. She was described as seclusive, interested in making money and having nice things, liking automobile rides and being a good housekeeper. Marital life was not congenial. She was difficult to live with, quick-tempered and domineering. She beat her husband on several occasions, prior to the involutional period. Her children are much attached to her. Beginning in 1929 she had considerable vaginal bleeding, and a dilatation and curettage were done which revealed hypertrophic endometritis. In 1934 she was treated for ventral hernia, lacerated perineum, pruritis vulvae, obesity and anal fissure. Throughout these visits to other clinics, a large psychoneurotic element was noted.

For a year and a half previous to admission, she had thought her husband was unfaithful and would follow him about, accusing him of going out with other women. She also accused him of being a thief, of stealing things from her store. The husband had always been extremely meek and mild, seeking his pleasures outside the home. He was not as ambitious as his wife, who was proud and did not wish to accept relief. She became increasingly disgruntled as the involutional period progressed, and was irked with her husband. During her stay in hospital she was overtalkative, agitated, depressed, tearful, and delusional concerning her husband's fidelity. She made no progress toward recovery, and was transferred to a larger State hospital. A report from that hospital indicates that she continues unimproved.

Mixed extravert—recovered

T. S. was a single woman aged 47. She was always domineering, liked to have her own way, easily upset, little interested in men, fairly active, somewhat rigid, efficient in her work, an active member in church activities, attending many social functions. For five or six years prior to admission,

she wept and became more disagreeable at intervals. Her family would give in to her, then she would be cheerful again. Just prior to admission she became anxious, cried, got into quarrels over trivial matters with her niece, and refused to eat. On admission here she was rather inaccessible, was resistive to nursing attention, held stereotyped poses for long periods of time, became a little more active and agitated, threw herself against the walls, was destructive, and had visual hallucinations. Although she was at first mute, she later began to talk, admitting self-accusations. She appeared fearful, wrung her hands, moaned, and had nihilistic ideas. Her symptoms at first strongly suggested a catatonic state, but after she became more active they resembled the cardinal symptoms of an agitated depression. She made no progress toward recovery, and was transferred to a State hospital. Her subsequent course was favorable; it is known that she was discharged as recovered. There the diagnosis of involutional melancholia was changed to manic-depressive psychosis, mixed type.

Mixed extravert—unimproved

C. T., a male, age 55, had never been a person who could easily settle down, as he has a marked wanderlust. He built luxurious homes which he was not able to maintain. He had always been interested in women, liked to have his own way, stubborn, rather rigid, always went into things in an extreme fashion, subject to tantrums. In these tantrums he had nervous indigestion and would shake all over, but through them was enabled to have his own way. He was moody at times, being alternately elated or depressed. The onset of his difficulty is dated three years prior to admission to the hospital. At that time he began going out with a girl much younger than himself. He broke up his home but subsequently returned. He later went with another girl younger than himself, worried over financial conditions and had feelings of guilt in regard to this, was more irritable with the children. He was anxious to please his girl friend, to whom he returned from time to time. He could not seem to make up his mind whether he wanted to return home or stay with his paramour. In the hospital he was depressed, agitated, and ate poorly. At times he would be quiet, but for the most part would pace up and down the corridor, talking first about his business difficulties, then about his early masturbatory habits. He was rather suspicious toward his wife, and said he was worried over his sinful extramarital relations. His affect was one of hopeless anxiety. He was fearful, and wondered what was going to happen to him. He thought he had committed a great many sins. Toward the end of his stay here he became more agitated, refused to eat, "knew he was terrible," thought one of the patients was spying on him, felt he was going to be sent

to prison, was quite hopeless in his attitude and was afraid someone would castrate him. He made no progress toward recovery, and was transferred to a larger hospital where, it is learned, he continued unimproved.

Poorly integrated—recovered

L. L., a woman aged 46, was born in New York State. She completed the eighth grade at the age of 16. She married at 21, but has no children. She has been considered eccentric for at least two years. She has always been unstable, seclusive, odd and "finicky." She and her husband had been looked upon as village characters. She refused to wash her clothes, and her husband had to buy her a new housedress every week. She had as many as 50 soiled housedresses and 50 wash cloths in her room, and would allow no one to wash them. Just previous to admission, she thought the food was poisoned and would not eat it. In the hospital she was depressed, anxious, tearful and hypochondriacal. Her trend was somatic and depressive, hallucinations were denied and statements relative to poison rationalized. She affirmed that she had always been "nervous." She made much of symptoms attributable to the menopause—hot flashes, feelings of weakness and pressure in the head. She made a rather surprising readjustment, gained appreciably in weight, ate and slept well and sought to minimize and rationalize previously expressed ideas. The history indicated that this woman has been peculiar for many years, but the actual psychosis seems to have been of only about two years duration, accompanying the menopause. It was found that, although she had been married 24 years, the hymen was intact. She could not be induced to discuss her sex life. It was not felt that she required formal commitment, and she was discharged to the custody of her husband. She remains much improved.

Poorly integrated—unimproved

L. E. F., a woman aged 41, was born in Pennsylvania. She was poorly adjusted in early life; always much attached to her mother; never satisfied in business relations or working; took little interest in men. She went with one boy friend for some years, but finally left him. She had a limited range of interests, and talked little about anything. She was extremely rigid. At the age of 34 she decided to become a nurse, and entered one of the State hospital training schools. During her stay, she had numerous somatic complaints and was hospitalized frequently. During the entire time she trained at the hospital, she was described as a typical psychoneurotic and was off duty 205 days because of psychoneurotic complaints, referable to her abdomen and genitourinary tract. She could get along with no one at the hospital, was lazy, incompetent, disagreeable, fault-finding and unappreciative. Following her resignation she was unhappy, somewhat mildly

agitated, came to Syracuse to visit her sister and was worried because she had no job. Finally she began to cry, and assumed a hopeless attitude, so that the doctor who was called recommended her admission to the Syracuse Psychopathic Hospital. In the hospital, she showed overproductivity of a stereotyped nature with verbigeration. Except for the fact that she clasped her hands, she was rather stiff and stilted in her movements and for the most part retarded in her activities. At times, during her stay here, however, she was seen squirming about. The psychosis was of undetermined duration but was characterized by persistent efforts at self-destruction, accompanied by self-accusations, tenseness, now restlessness, now hypomotility. There was some question whether this was a continuation of a severe psychoneurotic manifestation, or of a schizophrenic reaction. It was preferred to class her as involutional psychosis, melancholia, and she was transferred to a State hospital, since it appeared that she would need prolonged care. She remains unimproved.

Poorly integrated, but well adapted—recovered

F. C. was a 62-year-old woman. She had an unhappy early home life, during which her father deserted the family. Despite this, she went to college for two years. She always appeared introverted. She was generally on the defensive, because her ideas were a little "old-fashioned." She was upset by little things, given to tantrums and to irritability. At times she was kindhearted and generous, but most difficult to work with because she not only took her own responsibility but tried to take everyone else's in the organization where she was employed. She would often act in an undignified manner. She was conscientious, seemed to have a great deal of energy and intelligence, but was rather insensitive to other people's feelings. She was well adapted in married life. However, she was set in her ways, inclined to be irritable, given to outbursts of temper when she could not have her own way or when things did not suit her preconceived notions. She was much wrapped up in her son, and has been living with him; he in turn was much attached to her. Since 1935 she worried considerably over the loss of his job, finally having a "hysterical" attack. For about three years, she had been troubled with gall bladder symptoms and a mild cardiac affliction. Her husband died of angina pectoris in 1930, and she worried about heart trouble after that. For a year previous to admission, she had had attacks in which she believed she was dying. During her stay in this hospital, the outstanding symptoms were those of an anxious depression. She made steady progress, but was inclined to make much of minor somatic ills, and was especially annoyed by the noise of younger patients on the ward. She had auditory hallucinations, delusions of reference

and harm, said she was going to die and often said she was dead. She thought people were keeping her son from her and that something was going to happen to him. She made a steady progress here, but even to the last was inclined to make much of minor somatic ills, and was annoyed especially by happenings on the ward. After six weeks of hospitalization, she showed sufficient improvement to be returned home, and has continued to adjust.

Poorly integrated, but well adapted—unimproved

R. L., a woman aged 48, was born in Vermont, but came to Syracuse when she was a small child. She finished the eighth grade at 14, married soon after and has one child. She is described as unusually cool in emergencies. She had always been rather seclusive, stayed at home, worked hard, had a high sense of responsibility toward her own family, was hyperergic and would work until exhausted. She had some somatic complaints which increased in severity. The patient was referred to the psychopathic hospital after she had attended the free dispensary for six months because of hypochondriacal symptoms. In the hospital she was copiously productive, with much reiteration, ready tears, tenseness, anxiety, restlessness, yet with an outward appearance of euphoria and an almost ecstatic expression on her face as she told of her travail. Her story was an elaborate one of dire physical sufferings, beginning with intense pains in her head following her mother's death in 1936, leading to a collapse in which she shook all over and could not control herself. She disclosed a background of marital infelicity with a husband who drank and was lacking in consideration. Following her daughter's marriage, this troubled her considerably. The writers were at first inclined to consider her merely as psychoneurotic, probably anxiety type. However, she became more settled in her depression, expressed nihilistic delusions and a hopeless mental content, and made no progress toward recovery. It was therefore felt that she was better grouped as involutional melancholia. Formal commitment was advised, and she was discharged to one of the larger State hospitals, where she remains unimproved at the present time.

Poorly adapted—recovered

J. L., a woman aged 48, born in New York State, is described as jolly at times, but sometimes difficult to get along with, hyperactive, liking housework, being interested in her home, extremely meticulous, inclined to hold grudges, hating to give in because of her set ways, quick-tempered and spoiled. People suggested that she had been spoiled by her husband, since she was inclined to be argumentative and to belittle him. She underwent a hysterectomy 15 years ago because of fibroids: aside from the physical

discomfort following this, she showed no effects. Still, it added difficulties for her because she knew she could have no children. In the two years preceding her admission to the Syracuse Psychopathic Hospital in 1937, she became increasingly argumentative. She was depressed after a quarrel with her husband, and attempted suicide in the month prior to admission. Following this she became exceedingly depressed, talked about "sins she had committed," and hinted at suicide. In the hospital she showed a typical agitated depression, became more agitated as time went on, appeared rather seclusive, was obsessed with fears of not getting well, was unstable and wept frequently. It was noted at one time that she swallowed a number of hairpins and safety pins. She made no progress toward recovery here, and was transferred to a State hospital. A subsequent communication reveals that she adjusted well there, gained steadily and was finally discharged as recovered.

Poorly adapted—unimproved

M. D. was a woman of 64. She was always quiet, "nervous" and rather anxious. It was hard for her to make up her mind. She was discontented, rather submissive, and had no interests outside her home. She was admitted to the Syracuse Psychopathic Hospital in 1937, having become depressed and agitated following the death of her sister. In the hospital she was tense, agitated, hopeless and depressed. She gave physical and emotional fatigue (incurred in nursing her sister through a long fatal illness) as the cause of her depression. Apparently the patient's married life had not been wholly satisfactory, due to her husband's negligence in money matters; she would, however, not admit actual disharmony. There was no delusional content, but a physical component which militated against a ready readjustment. She had a large goiter for which she refused operation, moderate arteriosclerosis and hypertension, (blood pressure 160/100) and a systolic murmur. Throughout her hospital stay she was unhappy, slept poorly, and was worried over the fact that she had to have sedatives. She felt she was making no progress here, submitted her notice of intention to leave, and was discharged to the custody of her son. However, she failed to make an adjustment at home and was later committed to a larger State hospital. A recent report from that hospital indicates that she is unimproved.

Rigid type—recovered

K. D., a 53-year-old woman, was born in England. She had a convent school education, was interested in painting and singing but was talented in nothing else. She had always been overreligious, at one time stating she wanted to become a nun but later changing her mind. She was described as a typical Englishwoman: "if you wanted to know her you would have to

come over to her side of the road," never very happy, rigid, and rather "shut-in." About two weeks previous to her admission to the Syracuse Psychopathic Hospital in February, 1935, she became excited, continued more so and once during a blizzard left the house in only her nightclothes. She finally attacked one of her daughters, as a result of which was admitted to this hospital. Here she was acutely agitated, wringing her hands, pacing the floor and moaning and accusing herself of wrong doing. She wore a perplexed, bewildered expression, staring frequently at imagined objects on the walls. She was restless, depressed, almost in a panic at times, again rather childish and dependent in her attitude. Physical examination was essentially negative. The patient made no progress toward recovery here, and was transferred to a State hospital. It has been reported that she adjusted well there and was discharged as recovered.

The Involutional Syndrome Without Psychosis

The evolution of the benign manifestations into psychotic symptoms has not been sufficiently studied except in the contributions of Strecker and Palmer,[3] and of Davidson.[15] Are the more malignant characteristics an outgrowth of the psychophysiologic changes in this period, where early danger signs have been overlooked and stresses and strains been permitted to develop unheeded, or is there a specific involutional reaction type?

Hawkinson[11] has listed in order of frequency the following symptoms occurring in the female involutional syndrome without psychosis: "Nervousness" (subjective), menstrual disturbances, flushes and chills, excitability, fatigability and lassitude, depression and crying, irritability, disturbed sleep, tachycardia, palpitation and dyspnoea, vertigo and scotomata, "decreased memory" and concentration, headache, frigidity, numbness and tingling, occipitocervical aching, vague and indefinite pains, excessive sweating and formication.

Werner,[10] in discussing the male climacterium, listed the following symptoms: vasomotor disturbances, hot flushes, emotional instability with sudden uncontrollable shifts in mood, tendency to break into tears, periods of irritability and sometimes sullen anger. He found men at this period to exhibit a moderate degree of physical and mental fatigability, to complain of difficulties in concentration, to show general apathy, to have somatic complaints, and to be

impotent. Werner stated that 52 per cent of these individuals developed a psychosis.

Frequently in the writers' experience there has been a qualitative as well as a quantitative difference between the nonpsychotic involutional syndrome and the involutional psychosis. In nonpsychotic individuals undergoing involutional changes, a restricted range of interests, hypochondriasis and uneasiness may be present. Their attitude, however, is never so hopeless. There are compensations. These persons may become intolerant, irritable and difficult to live with, but generally they express their algolagnia sadistically rather than masochistically. The feeling of being wronged or discarded does not develop into a delusion of sin or unworthiness, and there is better preservation of the individual personality.

In the involutional psychotics there is more marked, more constant and more prolonged expression of agitated depression or disillusioned apathy. The anxiety has taken more complete hold, and one is dealing with a continuous anxiety state. The objects of pity, these patients develop feelings of unreality and their ideas are further divorced from reality. Superficially, the endocrine and autonomic symptoms do not appear as severe and are outweighed by the mental signs. The somatic factors are not as evident on the surface and are overshadowed by the individual's hypochondriacal complaints which are out of proportion to the physical findings. The emotions are more rigid, stereotyped and circumscribed and there is no daily fluctuation. Evidences of regression are present.

Delimitation of the Psychoses

The involutional psychoses *per se* appear to occur after 40 years of age, are found most frequently in women in the pre-, intra-, and postclimacteric stages, and are often closely associated with the menopause. Although a depression without retardation has been considered characteristic, the psychosis may begin as a simple or clear-cut depression with retardation or apathy, or at times as an excitement. True depressive retardation may appear in its course, or as a terminal reaction, or in the prodrome. The typical agitated depression appears most frequently at some time in the course of the psychosis. However, depression with overproductivity and

hypomotility, or depression with hypermotility and restricted ideation or underproductivity, are often found. Constant repetition of the same depressive ideation and a pseudostereotypy of rhythmic to-and-fro movement accompanied by hand-wringing, hand-clasping, or other manual manifestions, are often present. A certain tenseness of mood and increased muscle tonus is often observed. Indecision also is frequently observed.

Superficially, there is a slow, gradual, "restrictive" alteration in the personality; however, certain repressed, poorly utilized conflicts and guilt feelings, maladaptations and "castration" mechanisms, often come to the fore. Thus the change may be more apparent than real. A restricted range of interests occurs noticeably prior to the psychosis. There is a tendency to withdraw from "outside objects" or persons. This appears deliberate and emotionally conditioned, rather than instinctive or impulsive as in the cases of dementia præcox. The shrinkage is accompanied by a "horrified" emotional reaction as if the person touching the patient is polluting or being polluted. Self-interest and self-preoccupation must be differentiated from self-absorption. The individuals are quite aware of the external surroundings which, however, they do not deign to notice. A painful, perverse narcissism is present, with an attempt, often unsuccessful, to annoy and punish the persons about them as well as themselves. The regression is not so obvious at an early stage. The anxiety is more marked, more constant and more prolonged than that found in the anxiety neurosis. It has taken more complete hold of the personality. There is less hope, more depression and agitation.

The anxious, agitated depression occurs more frequently here than in the mixed manic reactions seen in the earlier periods of life. It is less frequently a transitional, changing phase, as in the cyclothymic reaction type. Elation or elevation of mood does not appear with the irritability seen in young manics. The expression of their irritability is rarely so destructive to the object or the world about them as it is in the younger mixed manics, although the tendency is there. Self-destruction and self-destructive ideation are more common. At the same time, one notes a certain attitude of martyrdom in regard to those about them. Although they are wronged, they are willing to take the blame; although they

are not worthy of the world, the world is not worthy of them and does not appreciate their sacrifice. They figuratively "disembowel themselves on their neighbor's doorstep." They may beg to be saved but "know" one will not or cannot save them. A whining, disgusted, nagging attitude toward the marital partner, relatives or physicians, is frequently observed. There is more rigidity and a greater tendency to regress than is observed in manic-depressive states. Manic-depressive or other psychotic manifestations are not as often observed in the family history. Mood is more appropriate to ideas expressed than in schizophrenia, but affect is a trifle less labile and is more circumscribed than that observed in manic-depressive psychoses. Marked fear, hypochondriacal delusions, ideas of sin and unworthiness, hallucinations and paranoid manifestations are common.

The development and course of the psychosis is dependent upon the precipitating catabolic, physicoendocrine and other complicating factors, and the severity of the repressed conflicts which come to the fore, as well as the personality. The satisfactions, bolstering, hope or compensations that can be obtained from the environment are often important in the prevention of the more serious symptoms.

Those who have had previous manic, depressive or mixed attacks are excluded from this group of involutional psychoses. Such cases, however, should be further investigated with respect to their contrast or similarity to the involutional picture.

In only 12 cases were there psychoneuroses early in life of sufficient intensity to be considered as such, although psychoneurotic traits were present in others. If the involutional psychoses were to be considered as a continuation of prolonged psychoneuroses, their validity as an entity in these cases might be as seriously questioned as are the involutional symptoms occurring in persons who have had previous attacks of manic-depressive psychosis. The same differentiation must be made in regard to the schizophrenias appearing later in life, or masked schizophrenias, where involutional symptoms may appear superimposed on a preexisting schizophrenic process.

A minimum of organic cerebral manifestations is present, although arteriosclerosis or early senility may at times mask the pic-

ture, be masked by it, or be associated therewith. Somatic disorders, including pelvic and thyroid disease, however, are a precipitating or accompanying factor in about half the cases.

Broadly speaking, we may encounter three groups in the involutional psychoses:

I. The involutional symptoms color, and are superimposed upon, preexisting abnormal mental states or severe personality deviations, and there exists a largely qualitative difference between the nonpsychotic menopausal syndrome and the involutional psychosis.

In this group are found the following types:

A. The previously disturbed functional or psychoneurotic reaction types: (a) Predominantly schizoid individuals who may develop a schizophrenia during the involutional period, or who may have been schizophrenics previously. (b) "Mixed" or depressive patients who, under the strain of involution, may develop into or resemble manic-depressive or mixed types, or who previously may have had attacks of cyclothymia.

B. The previously disturbed somatic types, including those with definite prolonged endocrine disturbances or debilitating physical disease. This type often includes cases in the preinvolutional syndrome.

C. The later existing, or simultaneously occurring, "masked" brain lesion types such as early arteriosclerotics, early seniles or preseniles (including Alzheimer's disease), or cases with "silent" brain tumors, multiple sclerosis, early Parkinsonian syndrome, Huntington's chorea, etc. This type often includes cases in the postinvolutional syndrome.

II. The so-called "involutional group," where psychoneuroses (or subsequently psychoses) are superimposed on the involutional period and its somatic components. Here a largely quantitative difference exists between the nonpsychotic and the psychotic. Here, the manner in which a person adjusts to the involutional period and its somatic components is important. Superimposed psychoneuroses and reactive depressions of the involution may occur here early and then merge into a later more severe psychotic state.

However, the previous personality may color the symptoms observed.

III. Because of the coexistence or simultaneous occurrence of both above-mentioned factors, or because of a multiplicity of factors, it is difficult to decide which type predominates. Several cases fall into this group, and it would appear difficult to definitely classify them. These differentiations are further complicated by the fact that in the involutional period we are dealing not with one component, but with a constellation of somatic and psychic influences associated with the menopause or independent of it.

In group II, where a psychoneurosis is superimposed on the somatic symptoms occurring in the involutional period, and where a largely quantitative difference exists between involutional neurotic symptoms and the involutional psychoses, psychotherapy is of great value.[19] However, a mental hygiene of the involution is necessary in all types to prepare these individuals and their relatives for the conduct of life during the involutional period, just as it is necessary in the education and reeducation of parents and children in preparation for puberty and maturity.

Endocrine therapy, because of the various considerations in the involutional psychoses may not itself prevent or be effective in the treatment of a psychosis. It may at times prove harmful if administered indiscriminately. It may be of value in that group where estrogenic or endocrine factors predominate in producing the neurotic symptoms, when administered early as substitutive rather than as stimulative therapy. Moreover, in the second group where the individual's reaction to the menopause and its somatic influences is preponderantly affected, it allays only one factor in the total picture, not the superimposed one. In the first group, where previous personality influences predominate, it has little effect.

Summary

1. From the standpoint of the personality it would appear that there are two factors which contribute to the occurrence of the involutional psychoses developing during the climacterium: (1) The personality changes and neurotic symptoms manifested in this period, or the more immediate prepsychotic personality alterations

which are superimposed upon this catabolic phase of life. (2) The previously more specific individual personality attitudes and adaptations, or the early prepsychotic personality.

One hundred twenty-three, or approximately 70 per cent of the cases here treated, were poorly integrated, which indicates to some extent the importance of the early personality attributes in the development of the psychosis. However, control studies and observations on a larger series of cases are necessary before this statement can be accepted as conclusive.

In the types allocated to group II, the earlier personality appears to play a lesser role, and the superimposed later neurotic symptoms arising from the manner in which a person reacts to the climacteric change of state are relatively more important. In group I, the symptoms occurring were at times either superimposed on, or continuous with, a previously existing severe neurosis or psychosis such as schizophrenia or earlier attacks of manic-depressive psychosis.

Although there were only 53 well-integrated personalities, there were 73 well-adapted individuals. In those patients who had been adjusting well, one cannot disregard the influence of the climacterium and its somatic components.

How the malignant symptoms evolve from the more benign manifestations is a question not readily answered. It seems that the matter of how well the personality is prepared to adjust to the involutional situation (with its restricted adaptations and failing biological and environmental compensation) is an important consideration. Many fail to react well to the demands made on the diminishing plasticity of the personality. It is possible that some of the traits which proved useful in the most active period of life in the years from 20 to 40 may prove disadvantageous in this restrictive period.

2. In view of the preceding discussion, it is of interest to note the finding that the prognosis seems to vary little with the presence or absence of unhealthy early personality traits. There is little material difference with respect to the percentage of improvement between the poorly-integrated and well-integrated types. This indicates to some extent the presence of other factors. It appears, therefore, that while the early personality may more or less influ-

ence the occurrence of involutional psychosis, it in itself has less bearing on their course and prognosis.

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BOOK REVIEWS

Textbook of Nervous Diseases. By ROBERT BING. Translated and enlarged by Webb Haymaker from the fifth German edition. C. V. Mosby Company, St. Louis, 1939. 838 pages, with copious index and references. Price $10.00.

Professor Bing's textbook on diseases of the nervous system is now available to American and British students and to physicians who were unable to read the German text, of which five editions have already appeared. A notable service has also been performed by Professor Haymaker, who has rendered a fine translation. It is more than a translation in the commonly accepted meaning of the term, for he has transcribed the first person lecture form of the German text into fluent expository English, at the same time retaining the lucid style and accuracy of presentation which are characteristics of Bing's writings. The latter's extraordinary popularity as a teacher and medical writer must be due to clear and concise presentation, a gift also shared by the translator.

A feature of Bing's treatise is the emphasis which he places upon treatment and the interest which is manifested in discussing and evaluating the various forms of treatment in vogue. This is particularly notable in what he says about treatment of general paresis and cerebrospinal lues. Tryparsamide is not favored by him because he feels it unsafe, and believes the effect upon the nervous system, as shown by occasional blindness following its employment, may give rise to other neural damage and even to sudden death. He favors the employment of mercury in conjunction with potassium iodide, particularly in the early stages and in cerebrospinal forms. He recognizes fever therapy as the greatest advance yet known, and prefers malaria to other pathogenic organisms or to such mechanical measures as diathermy.

Salvarsan he considers dangerous, and it appears that he does not use it except at the request of the patient, who is required to sign a statement relieving the physician of responsibility. This is not true of various arsenobenzol derivatives which he advocates for tabes. His experience with Wassermann-fast patients leads him to believe that a strong reaction may be present when recovery is satisfactory, and is not to be taken as having much prognostic value. When recovery is otherwise good, he says it is justifiable for the physician "to practise pious fraud" in order to avoid the patient's becoming an unhappy syphilophobe.

There are many topics treated in this thick volume which merit praise: the sensible discussion of disorders resulting from the abuse of alcohol; the section on diseases of the endocrine system; his lucid treatment of the anatomy and pathology of the cerebellum. Other excellent chapters might be enumerated.

As one peruses the book, his approval increases until he reaches the section on psychoneuroses, when with no little astonishment he reads: "The rational treatment of neurasthenia consists primarily of psychotherapy. Too much credit cannot be given to Paul Dubois for his services in the realm of psychotherapy." Shades of Hippocrates! Paul Dubois has been dead 70 years; he was an obstetrician, and the psychotherapy which he practised is as outmoded as the surgery of his period.

Turning the pages hastily to see what other authorities meet with our author's approbation, we find that Charcot and Janet are referred to with approval, also the American physician Beard receives high praise for his classical description of neurasthenia in 1868. Under the caption "Hysteria," we find these kindly references to Freud: "Even though I hold to Dubois' teaching concerning the pathogenesis of hysteria, I do feel that Freud's view merits some consideration. [None given] According to Robert Scheu and others, Freud's view is an 'integral part of modern thinking;' according to Paul Hartenberg and many others, it is 'a frabric of mistakes, obscenity, and stupidity' . . . In spite of the exaggeration of the frequency of infantile-sexual etiology, in spite of the mistakes made in the name of the doctrine of conversion, in spite of the regrettable harm done in the improper employment of 'psychoanalysis,' the ideas promulgated by Freud are in essence, fundamental. He deserves great credit for emphasizing anew the observations of Janet and Breuer." (?) Freud is then dismissed, but the author returns to psychoanalysis to say: "Emil Feer, a pediatrician who for several decades has studied the psychology of children, states that the assertion of Freud and his disciples about sexuality in children is contrary to facts. [sic] Feer points out that the investigation of small children by the 'irresponsible and damaging' method of the psychoanalyst, Melanie Klein, should be absolutely prohibited." It is evident that Professor Bing has long had a resistance to psychoanalysis, and has read nothing authoritative on the subject for about 40 years.

The truth is that the learned professor, like many other organic neurologists, although happily not all, is unable to comprehend the influence of unconscious emotional factors, and deals with the whole subject upon a conscious level. Witness this final quotation: "No 'psychoanalysis' is necessary to uncover sexual etiological factors. The sexual factors are not submerged or 'shoved aside' in the subconscious mind. Usually they are in-

tentionally kept from the physician until by tactful maneuvering on the part of the physician and by gaining the patient's confidence they can be brought to light."

It would be unfair to stress the reviewer's difference of opinion with reference to the value, nay the importance, of the psychoanalytical viewpoint to an understanding of the psychology of the psychoses and to the carrying out of mental hygiene activities. Professor Bing has rendered a service so outstanding to neurology that this one defect may well be treated with kindly indulgence. It is predicted that Bing's textbook will duplicate in English-speaking lands the fine reception it has enjoyed in Central Europe.

The Psychology of Common Sense. A Diagnosis of Modern Philistinism. By A. A. Roback. Sci-Art Publishers, Cambridge, Mass., 1939. 350 pages. Price $3.00.

Professor Roback has to his credit an extraordinary list of books along the lines of educational psychology. His "Mentality Tests for Superior Adults" is perhaps the best known. He is also interested in behaviorism. It was he who edited the collected papers of the late Morton Prince under the title of "Clinical and Experimental Studies in Personality." As a group, his writings might be described as popular; his style is conversational and breezy in places; occasionally he lapses into slang. He recognizes the difficulty in the selection of his title, and in the introduction attempts to define his conception of the term; it must necessarily be a popular conception. One may have his own views as to what is embraced by the term "common sense." The derivation of it would imply that it is common to the majority of people. One must then answer the question what people are meant. It is difficult to separate native common sense (which would depend, like native intelligence, not upon learning and experience but upon innate qualities) from the general body of knowledge and information, most of which was acquired from education and experience. It has to do largely with judgement that is manifested in meeting situations. But judgement is obviously founded upon experience and acquired knowledge, which perhaps implies a degree of conservatism or a medium course, avoiding extremes or novelty but at the same time avoiding falling into a rut. The author mentions certain examples of common sense. He tells us that the actual drawing of conclusions is not necessarily the function of common sense. He believes that common sense is to nonpersonal relations what insight is to personal relations.

The next definition which he boldly attacks is the word "sanity." Sanity, he truly remarks, is one of those words which everyone knows the meaning of until he is asked to define it. It does little good to trace the

word to its origin and consider its etymology, for words notoriously change meaning from generation to generation. Perhaps a good timely example is the much-used word "traffic," which at one time was synonymous with "trade." This often gave an implicaiton of disapproval, as when used in connection with illegal dealing in narcotic drugs. Now the common use of "traffic" is with reference to vehicles in motion in city streets. So that the derivation of the word sanity (or "sane"), from the Latin "sanus" (healthy), does not help us to an understanding of the modern significance of "sanity." One may easily conceive of an individual who is sane in the eyes of the law, but at the point of death from disease. A common preamble to the last will and testament is: "I, John Smith, being of sound and discerning mind, but sick in body . . ." It is no less difficult to define sanity than to define insanity. The truth is that in estimating the significance of a belief, as to whether it is justifiable or a delusion, many collateral circumstances must be borne in mind. No one, for example, would justly claim that Cotton Mather, the eminent preacher of the seventeenth century, was a lunatic, yet it was he who instigated the witchcraft delusion of Salem, firmly believing that the feebleminded old women who were put to death at his connivance were witches. Many unreasonable beliefs must be excused from the category of delusions, if they pertain to religious dogma. Perhaps, after all, it simmers down to *meum et tuum*: "Orthodoxy is my doxy and heterodoxy is your doxy." This idea as a philosophy of life has its merits.

Dr. Roback's latest book covers a wide range from "Sex in dynamic psychology" to "The concept of character in a dictator-ridden world." For a popular presentation of sociology and psychology in a book which is readable and often amusing, but fundamentally sound, "The Psychology of Common Sense" will give pleasure and satisfaction.

The Organism. A Holistic Approach to Biology Derived from Pathological Data in Man. By KURT GOLDSTEIN, M. D. American Book Company, New York, 1939. 519 pages. Price $4.00.

Dr. Goldstein's book, which is divided into 12 chapters, has been translated from the original German. Supplementing the subject matter are an index, a bibliography and a foreword.

A complex topic is treated with the skill and dexterity characteristic of a man having an extensive background of neurologic and psychiatric experience. Among other things, an attempt is made to solve the problem of "whether biology as a science is at all possible," the aim being "not to offer theoretical speculations but a presentation of the facts themselves and a discussion of those explanatory concepts which these facts suggest

and through which, in turn, a reliable comprehension of biological phenomena is attainable."

The behavior of individuals with brain injuries and the theory of the reflex structure of the organism are discussed in some detail. The organism is viewed "in the light of results obtained through the atomistic method." The effect of functional impairment on the organism, and the latter viewed as a whole as well as from the "holistic approach" are considered. Some attention is also given to the organism from the Gestaltist viewpoint.

Many of Goldstein's theories are fortified by animal experimentation and laboratory findings. He is inclined to base his conclusions on positive rather than on negative facts. In order to fully appreciate the contents of his book, the reader should be psychologically minded if not psychologically trained. Certain passages are readily understandable, while in others the author borders on the philosophical, to a degree clouding the point which he is trying to make. Some of the latter difficulty may be attributable to slight inadvertent alteration in meaning through translation.

For the average person, Dr. Goldstein's book will present considerable difficulty of interpretation, but to psychologists and psychiatrists it should appeal strongly.

The Life and Death Instincts (The Vita and Fatum). By ARTHUR N. FOXE, M. D. The Monograph Editions, New York, 1939. 64 pages. Price $2.00.

This monograph is a small padded essay which adds little to the newer psychoanalytic theories concerning the life and death instincts. Attempt is made to substitute for these instincts the terms "vita" and "fatum" respectively, but the arguments for this change are not significantly convincing. There are many disgressions, such as the introduction which serves as an unnecessary apology for psychoanalysis (incidentally well-written and cleverly set down, but withal quite irrelevant). The relation of these disgressions to the subject at hand is rather forced: e. g., the argument on "organic" versus "inorganic," or the paragraph or two on Machiavelli, or the complete chapter (?) on the author's subjective experiences while writing the essay. These things are interesting but hardly germane.

The gist of the monograph is that the threat to life may be equal to the castration threat as a factor in the dynamics of neuroses or psychoses, and that the death instinct (the "fatum") is a more positive dynamic force than the "vita" (life instinct). This is nothing new, since Freud himself toyed with the idea and others have elaborated greatly thereon. The clinical material is derived almost entirely from criminals, and the author has

coined the term "criminotic" for these individuals. However, the material is poorly organized and presented.

This small volume may prove of interest to the more philosophic psychiatrists, but would appear to have little practical value for the general body psychiatric.

Minor Mental Maladjustments in Normal People. By J. E. WALLACE WALLIN, Ph.D. Duke University Press, Durham, N. C., 1939. 298 pages. Price $3.00.

This book offers another of Dr. Wallin's valuable contributions to applied psychology and mental hygiene. The author states on the title page that the volume is "a casebook for the use of students of mental hygiene, psychology, education, child development, sociology and the formation of personality traits."

The author's case material was secured by the questionnaire method from his graduate and undergraduate students, whom he contacted during his professional career. He asserts that he has collected 600 case histories, of which 290 are incorporated in this volume, others having appeared in his book "Personality Maladjustment and Mental Hygiene."

The wealth of material is selectively grouped under distinct headings. Theoretical comments, explanations and discussions are restricted principally to the introductory chapter. Numerous references are found to textbooks and other related literature, serving to assist the student in understanding the mental mechanisms underlying behavior and the therapeutics exemplified in the autobiographical sketches.

We are at times witness to individual evolution of fears, phobias, anxieties, undesirable character traits and asocial behavior. We understand the conditioning process through a live object lesson. We can view the crisis, the mental conflicts, also in some cases a successful solution and the acquisition of good mental health on the part of the individual presented.

The book is of value primarily to instructors and students of psychology and allied disciplines. It may also be of personal assistance to the student, by encouraging him to recognize and possibly unravel his own mental twists. The "casebook" is of vital interest to all concerned with the intelligent guidance of children and of young adults.

The presentation and its casebook style may not be inviting to the average lay reader, who would probably prefer a "literary digest" of genesis and therapy of those minor mental maladjustments of normal people. However, leaders of discussion groups may find illustrative material for their studies and presentations.

The psychiatrist also may benefit and learn from autobiographies of men and women presenting symptoms which were often successfully cured. It may possibly restrain him occasionally from fatalistic prognostications, and help him in his clinical efforts to promote the best mental health when consulted professionally.

The book is not dogmatic, is well edited and does justice to the author, who has published a considerable number of books and articles in the field of applied psychology. He has had a vast experience and is at present director of special education and mental hygiene of the Delaware State Department of Public Instruction and the Wilmington public schools. He is also visiting professor of educational psychology in the Duke University summer school.

The Psychodynamics of Chewing. By H. L. Hollingworth. Archives of Psychology, No. 239, Columbia University, July, 1939. 90 pages, paperbound. Price $1.50.

The knowledge that much of human behavior is characterized or influenced by collateral motor automatisms led the author to undertake the present introductory study. He therefore embarked upon an extended series of experimental investigations on the role of sustained mastication in the psychophysical economy of human activity. The author allows that it is in the nature of a "feeler," admitting that observations on 20 subjects over a 20-day period is a modest effort. He says, "We have been interested first of all in the general *direction* of any possible effects of the experimental variable, rather than in precise quantitative determination of their magnitude."

Early in the work, under "The Energy Cost of Chewing as Reflected in Pulse Rate," we read:

> There is evidence, which we have presented elsewhere, that when chewing there is a reduction of energy that otherwise is wasted in the form of random restlessness. The saving thus effected does not all go to support the activity of chewing, for we have also shown that, although the worker reports less subjective strain in the process, added energy is discharged into the movements of the main occupation.

Increased subjective relaxation having been reported by the subjects, Hollingworth wondered if this did not imply concomitant lowering of "vigilance." He suggests, "If this be the case, rhythmic chewing might be expected to facilitate work processes of a simple repetitive sort . . . but perhaps to interfere with work calling for a lively alertness and sustained attention." Further: "It seems entirely reasonable that chewing,

as a conspicuous feature of the activity of eating, should act as a reduced cue effectively redintegrating the typical meal-time relaxation."

Concerning "The Influence of Chewing on Output in Routine Work," experiments were performed with six subjects through 12 successive half-day periods, using nine different kinds of work (controlled tasks under laboratory conditions). The investigator concludes: ". . . in them (the experiments) we have found no evidence that sustained chewing . . . exerts any important effect on work output in routine tasks." However, "For the one that shows a mildly unfavorable effect there are two that show definite facilitation."

Certainly there is a beginning here for an investigation of significance. This work has, of course, merely brushed the surface. Let us draw no conclusions, but await a study covering a more abundant material. Perhaps it would be well also to find a substitute term for "psycho-dynamics," which appears inappropriate in an investigation so colored by somatic measurements.

Mental Conflicts and Personality. By MANDEL SHERMAN, M. D., Ph.D. Longmans, Green and Co., New York, 1938. 310 pages with appendix and index. Price $2.25.

This volume represents, in the words of the author, an "attempt to evaluate the most prominent theories regarding the role of mental conflicts, and to systematize those data which appear to have an objective basis." For a task of this magnitude, it is remarkable that the author has done so well. Much of the material is presented without reference to original sources, either by direct statement or introduced by such phrases as "Many psychiatrists believe" or "It is commonly held by psychiatrists." Nevertheless, the volume covers, in the short space of 300 pages, the more prominant theories of psychopathology in existence today. The book would find its widest use among those pursuing the fields of sociology, psychology or psychiatry as advanced students in training for their respective special fields of endeavor. For them, it unquestionably presents a comprehensive résumé of modern thought on conflicts and personality.

However, Sherman attempts to go further: "the experimental literature has been carefully scrutinized, and those reports which appeared of scientific interest have been included in the discussion, often, however, in very brief statements." Here, by the very nature of the subject, the author's reports are not frequent. The difficulty of submitting either personality or mental conflicts to controlled experimental conditions is, of course, well known. Further, the difficulty of properly evaluating any material gathered from such experiments is tremendous. As an illustration, the author

makes much of the lack of experimental evidence supporting the validity of the concept of a universal Oedipus situation. He reports as having "considerable significance" the negative findings of one experiment which consisted of 150 young children being asked to state quickly their first 10 thoughts regarding their fathers and mothers. Replies interpreted as showing the usual dependence upon and respect for both parents indiscriminately are taken as indicating the nonexistence of an Oedipus situation in these children. Perusal of the author's statements in regard to mental mechanisms, rationalizations, cultural forces and attitudes show the fallacies inherent in the evaluation of experimental results such as those he quotes. By this, Sherman seems to have unwittingly illustrated the dilemma of the "scientific" psychologist attempting to apply experimental methods to the study of the whole person, his attitudes, experiences and developments.

Throughout, Sherman rightly insists that the subject matter of his work is highly theoretical, and that "a systematic evaluation of the material should function as a stimulus to further objective and experimental work." The basic principles of psychoanalysis are outlined and adhered to without being recognized as such; rather they are referred to as integral parts of our body of knowledge. This will be regarded by many as the height of unqualified acceptance, and the author's indulgence in occasional quarrels with analytic principles will be disregarded.

He also mentions the difficulties inherent in sociopsychiatric studies because of superficial descriptions of "intricacies of family organization, emotional elements of the interrelationships, the discrepant attitudes between the parents, the personal difficulties of the parents" as they affect the child or have affected the adult during his development. He adds significantly, "These factors are frequently impossible to study in adequate detail." Perhaps here he has outlined the enormity of the problem confronting those who would use our knowledge of the psychopathology of the individual in its logical application to interpersonal relationships or to sociology.

Judged from the viewpoint of the specialist in the field, Sherman appears to have fallen short of the high goal he had set for himself in his preface. He has, however, contributed a volume which should prove to be of assistance to those students who desire a readable and interesting exposition of present-day conceptions in "mental conflicts and personality."

The Light Cycle. By J. K. Poyas. The Christopher Publishing House, Boston, 1937. 110 pages. Price $1.25.

If we had asked that a book be written which would be the epitome of oral erotism, our request would have been fulfilled adequately in this nearly

pocket-size volume. The writer offers up a salad whose basic ingredient is an evangelical aspic and whose dressing is a faint *soupçon* of the occult. Says Poyas in his preface:

> The messages, which compose the contents of this little book, were received by me and recorded direct on the typewriter between the hours of 8 a. m. and 5 p. m., in a downtown office building, while others were present in the same room, and while the usual heavy traffic was in motion in the street below. Each message is complete in itself.

The messages, in case you are still interested, were dictated by "that Ever-living Dynamic Individuality who stood by my side and dictated these messages as I recorded them direct on the typewriter—THEODORE ROOSEVELT." The flood of moralistic polemics which follows directly upon this enticing bit of whimsy begins with a message dated October 22, 1932, being evidently precipitated by the presidential election of that year. Indeed, one has a haunting conviction that "The Light Cycle" is the child of an election bet.

The publisher insists that "Mr. Poyas deals forthrightly and with apology with the subject of psychic communication from the life beyond." Just wherein he has "dealt with" it, one fails to discover, regardless of the evanescent mold in which the polemics are cast. The author maintains that a New Cycle of Light has come into the world; but ah, the majority of us poor mortals are unaware of this "Spiritual awakening," and are trying to live by the rules that governed the Dark Cycle preceding this one. "The entire work is one of dignified conception," we read on the dust cover. The reviewer, however, failed to discern even the outskirts of dignity. Rather is there a strong resemblance to the Letters to the Editor which one reads in a newspaper. Most of Poyas' time is spent in flailing Mammon. Whatever there may be of mental hygiene value must be either carefully secreted or cryptically expressed.

Intelligence and Crime. A Study of Penitentiary and Reformatory Offenders. By SIMON H. TULCHIN. University of Chicago Press, Chicago, 1939. Pages 166+XIII. Price $2.00.

It was long held, on the basis of several studies believed proven, that crime was a function of intelligence, being related to it in indirect ratio. The author and Dr. Herman Adler, whose help he freely acknowledges, were dissatisfied with the studies on which this conclusion was based, because they were all made on highly selected groups without adequate controls in the noncriminal and nondelinquent population group.

Tulchin's group, which covers the period 1920-1927, consists of 10,413 prisoners in three penal institutions in the State of Illinois. The inmates were initially all tested by either the Army Alpha test (if they could read and write) or by the Army Beta test. Those with inferior ratings were retested individually, the results being converted to the Alpha scale by the use of standard regression lines. Comparison with the general population was made by using the Army draft test results. Additional data were gathered on intelligence in relation to nativity, race, type of crime and recidivism, then to age, height, weight, and various socioeconomic characteristics.

From analysis of the various tables, many interesting facts are brought out and much speculation is set in motion. First of all, Tulchin warns against regarding the test scores as infallible measures of intelligence. (Room for further work on the relationship of the test score to intelligence is clearly indicated.) He shows that the score is higher for southern negroes when they reside in the north, and that this rise has a positive correlation with the length of their stay. The same is true for persons of foreign birth residing in the United States. These facts prove true even where the Beta test is used. He shows further that the percentage of inferiors in prison is almost identical with the percentage in the general population; they are even closer if the individuals be classified according to nativity and race. Another interesting fact is that more of the unmarried men were classified as inferior; of the married men, those with several children tended to lie in the inferior group. One finds also that there were more superior individuals and fewer inferiors among the recidivists than among the first offenders. This is particularly true for the foreign-born group: it has been shown that their score is increased with longer residence in this country; indeed, this may be a partial explanation of their higher score. Tulchin guesses that the explanation of the superiority of this group may be the presence of a feeling among its members that they made a small mistake, but can outwit society if they are careful not to make a similar one. Also, it may be that the inferiors draw longer sentences and are more closely supervised on parole, thus having less opportunity to repeat their crimes.

The crimes were divided into: (1) Fraud—including embezzlement, confidence game and forgery. (2) Robbery—including assault to rob, attempted robbery, and robbery with a gun. (3) Larceny—including both grand and petit larceny, attempt larceny, and receiving stolen property. (4) Burglary—including attempted burglary and burglary with explosives. (5) Murder—including assault to kill and manslaughter. (6) Sex crimes—including rape, indecent liberties, sodomy, incest, crime against

nature, crime against children, and bigamy. (7) Miscellaneous—including arson, perjury, malicious mischief, kidnapping, etc. The latter group was omitted from the tabulations because it contained so few men and such a large variety of crimes. Among the many facts uncovered was that those sentenced for fraud were the most superior, those for murder and sex crimes the most inferior, in that order.

The second part of the book deals with the type of crime in relation to various other factors, such as nativity and race, intelligence, recidivism, age, weight. It was shown that there were more sex crimes and cases of fraud among the older men, more larceny, robbery and burglary among the younger. The percentage of sex crimes was greatest among the foreign-born, and the percentage of men committed for murder was nearly three times as great among the foreign-born and negroes as among the native-born. The groups originating in Greece and Italy were the highest in the percentage of those committed for murder. Although the explanation for this is not clear, a difference in mores must be postulated.

A chapter is included on the inmates of the Illinois State Penitentiary for Women, but its conclusions are not nearly so valid because the group covered is small.

The book is well buttressed with tables and graphs. The proofreading is poor, a number of mistakes having occurred. However, the process used, that of the planograph, is cheap and has brought the book well within the general reach. The author is clear in his commentaries and fair in his conclusions. This book is heartily recommended to anyone interested in criminology, and is sufficiently provocative to stimulate many further studies. It will well repay the time which the psychiatrist devotes to it.

Mental Health. Edited by Forest Ray Moulton. Associate editor, Paul O. Komora. Publication of the American Association for the Advancement of Science, No. 9. The Science Press, Lancaster, Pa., 1939. 470 pages. Price $3.50.

The present volume emanates from the fourth symposium which the American Association for the Advancement of Science has held in the field of important problems of public health. The symposium was organized in collaboration with the American Psychiatric Association, the U. S. Public Health Service, and the Mental Hospital Survey Committee. Dr. Walter L. Treadway, assistant surgeon-general, U. S. Public Health Service, was chairman of the publication committee, which included Nolan D. C. Lewis, Abraham Myerson, Joseph Zubin, Harry Stack Sullivan, Clarence M. Hincks and Franklin G. Ebaugh.

Never before has it been possible for the interested reader to have at hand, within a single binding, such an abundance of material and so great a variety of viewpoints in the mental health field. Numerically alone, one sees an imposing array of contributions: 49 papers, 20 invited formal discussions and 21 informal discussions. As for content and approach, the symposium offers the following partial roster of contributors: Barrera, Schroeder, Jellinek, Pollock, Bryan, Malzberg, Dunbar, Lasswell, Noyes, Parsons, Strecker, Ruggles, Stevenson and Slagle. It is interesting to examine the schema by which their contributions are woven into the general pattern of the symposium. The six general categories (apart from the introduction—I), with one or two sample titles, are as follows:

II. Orientation and Methods in Psychiatric Research. Problems associated with structural and physicochemical alterations in the central nervous system—The function of biometric method in psychiatric research.

III. Sources of Mental Disease: Their Amelioration and Prevention. Genetics and heredity of mental disease—Immigration and the mental health of communities.

IV. The Economic Aspects of Mental Health. Costs and organization of psychiatric service in the United States—The bearing of emotional factors on social health programs dealing with economic disability.

V. Physical and Cultural Environment in Relation to the Conservation of Mental Health. Some comparative data on culture and personality with reference to the promotion of mental health—Segregated communities and mental health.

VI. Mental Health Administration. Purposes, aims, powers and duties of a centralized state administrative organization—The mental patient in respect to bona fide residence.

VII. Professional and Technical Education in Relation to Mental Health. The present status of undergraduate instruction in psychiatry in the United States and Canada—The clinical training of psychologists and allied specialists.

Here, then, in this meeting-place where organicist and functionalist (for want of a better term) meet between two covers, will one find nearly all the channels of expression on problems of mental hygiene. The informal discussions are welcome supplementations of the main body of the text, for differences of opinion are presented at many points, and there is generally a spirit of health controversy.

Limitations of space forbid comment here on each of the papers and the discussions. Appropriate indeed, however, is the following excerpt from the introductory remarks of Thomas M. Rivers:

> Where personal judgment may be left out of the equation we rely upon the facts of medical *science* free from the social skill of a gifted humane physician; where such a physician may not be dispensed with, we speak of the *art* of medicine. Therefore, it may be the great contribution of Psychiatry in the future to describe and define the Art of Medicine in more precise and useful terms by insisting upon the comprehension of the physician as one of the factors in the prevention and cure of disease.

An excellent synthesis of conflicting attitudes is offered in the closing address on Human Needs and Social Resources, given by C. Macfie Campbell. This constituted the final session of the symposium and was open to the public. A few lines from Campbell's words will be quoted for the reason of their prophetic nature:

> Man of the physiological laboratory is a most ingenious mechanism but lacks a soul. Man of the psychological laboratory is a highly respectable fellow, carrying out his tasks with docility, but living a sheltered life, exposed to no human emergencies. Economic man, perhaps already extinct, was a curious fellow, bloodless and unemotional, moved by very few springs. As for man of history, it was difficult to see him through his various trappings, his titles, his official exploits and the mendacity of his chroniclers. The data deprived from the study of suffering man, neurotic and psychotic, may not only enrich the concept of man, but may bring to special economic, sociological and cultural problems suggestions of theoretical and practical value.

Textbook of Abnormal Psychology. By Roy M. Dorcus and G. Wilson Shaffer. Second edition. The Williams and Wilkins Company, Baltimore, 1939. 475 pages. Price $4.00.

This book has had one previous edition and four reprints, and is well known to students of psychology and of related subjects. The large amount of factual material contained in this volume makes it difficult to give a brief outline of its contents. It is divided into 14 chapters as follows: the field and scope of abnormal psychology; sensory disorders; motor disorders; disorders of association and memory; theories of disorders of the central functions; desires, feelings and emotions; sleep, dreams and hypnosis; classification of mental diseases—organic psychoses and epilepsy; functional psychoses (2 chapters); psychoneuroses; mental deficiency and mental superiority; chemical therapies; psychotherapy. Abnormal psychological phenomena are correlated with normal ones, and abnormal symptoms and behavior are explained as exaggerations, deviations, etc., of essentially

normal traits. The authors are careful in forming conclusions, and emphasize the narrow limits of our knowledge in regard to both normal and abnormal psychological phenomena. The views held by various schools and authorities are thoroughly and objectively cited, followed by a presentation of the author's own views, which for the most part follow the lines of "reaction psychology." The descriptive clinical section shows but little deviation from the course followed in other standard texts on clinical psychiatry. The illustrative case material is well selected and concisely presented. The bibliography and the index are carefully prepared.

In their evaluation of psychotherapeutic methods, as well as in their interpretation of schizophrenia, the authors align themselves with Adolph Meyer and his psychobiological approach. They show full appreciation for the contributions made by psychoanalysis to psychiatric progress. However, they also offer a great deal of sound criticism of orthodox psychoanalysis. There are many statements with which the analytically oriented psychiatrist will not agree, especially in the chapters on dreams and psychoneuroses. Mental deficiency and superiority are considered in a broader sense than customarily. Under this heading the authors discuss plus and minus deviations from the norm, both in the intellectual and in the emotional spheres, also the "psychopathic states." Considerable fluctuation exists in the *niveau* of presentation. Some paragraphs are presented in a rather elementary manner, for the benefit of the student who has no preparatory knowledge of the subject. Others, containing an abundance of technical terms, presume a sound knowledge of anatomy, physiology and clinical medicine. These latter are of value only to the physician who possesses such knowledge, and are probably meaningless to the student for whom the book is primarily written.

There are a few inaccuracies, inconsistencies, superficalities and repetitions, which should be eliminated from future editions. These occur particularly with regard to strictly medical facts. To this reviewer, a stricter separation of organic and functional factors would seem to be of decided didactic advantage. It seems doubtful whether a discussion of the physical basis of hyperopia, myopia and the different forms of color blindness should occupy space in a textbook on abnormal psychology. The same question may be raised with reference to the pathology, diagnosis and treatment of organic psychoses. If, however, the incorporation of the latter subjects be considered essential, the presentation should be somewhat less fragmentary. The addition of a chapter on chemical therapies is stressed as an important new feature of the second edition. The authors present a sound, conservative view with regard to insulin, metrazol and other new methods of treatment, and suggest that the estimation of the ultimate thera-

peutic value of these methods be deferred for further study. Concerning this, they say:

> In times the mentally ill have been beaten, or ducked into cold water, or spun about until dizzy, or otherwise subjected to treatment we would consider inhuman today . . . Other chemical attacks have also been used . . . A determined physical assault upon the patient with purges and emetics has been urged, and used . . . In the light of the above, these new treatments must be viewed with a certain skepticism . . . It still seems possible that this procedure may join the limbo of those which have gone before . . . only rarely will those in the first six months of their sickness be treated by these agents until such time as they are established as not only capable of changing behavior, but also as not marking those subjected to them with permanent brain damage . . . This conservative position is in direct conflict with recommendations of those who see in insulin and metrazol harmless, effective therapeutic agents.

The question may well be raised whether therapeutic novelties, the ultimate value of which has not yet been definitely demonstrated, warrant a detailed discussion in a special chapter, in a standard textbook on abnormal psychology.

To quote from Dr. Dunlap's and Dr. Chapman's forewords: "There are various points of interpretation, of course, on which I should take issue with the authors; and on some of these points I should possibly be right." "I am not in agreement with the authors in some of their conclusions."

The reviewer is in accord with these statements, but also wishes to subscribe fully to the following quotation from Dr. Chapman's foreword:

> This admirable book is written by two psychologists for students of psychology. It is a splendid work and to my mind the outstanding treatise on the subject today. It is obvious that to its preparation there must have been given long study and painstaking effort yet one may easily forget this in the readability of the book. The authors have written simply and their presentation of theory and fact is clear. There is in this volume a remarkable amount of information of great value to the student.

NOTES

DR. ADOLF MEYER NEW PRESIDENT OF NATIONAL COMMITTEE

The Board of Directors of The National Committee for Mental Hygiene announces the election of Dr. Adolf Meyer of Baltimore as president of the National Committee, to succeed Dr. Arthur H. Ruggles of Providence, R. I.

Dr. Meyer is professor of psychiatry at Johns Hopkins University and director of the Henry Phipps Psychiatric Clinic, Baltimore, which he founded in 1913. Often referred to as the dean of American psychiatry, Dr. Meyer has long been the acknowledged leader of his profession and has exerted a wide and deep influence on the growth and development of psychiatric thought and practice both in this country and abroad. His former pupils occupy leading posts as teachers and practitioners of psychiatry throughout the United States and in many foreign countries. He has been president of the American Psychiatric Association, of the American Neurological Association and of the American Psychopathological Association. He is a member of numerous scientific societies and has received academic honors from various universities here and abroad.

Dr. Meyer collaborated with Clifford Beers in the founding of the National Committee for Mental Hygiene, in 1909, and gave the mental hygiene movement its name. He is chairman of the National Committee's Advisory Committee on Psychiatric Education, and was one of the organizers of the American Board of Psychiatry and Neurology, established in 1934. He was the first Salmon Memorial lecturer in psychiatry and mental hygiene at the New York Academy of Medicine.

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INTERHOSPITAL CONFERENCES

The downstate interhospital conference will be held at the Psychiatric Institute and Hospital, New York, on the afternoon and evening of Thursday, April 18 and on the morning of Friday, April 19. The upstate conference will be held at the Utica State Hospital, Utica, on Friday, April 26 and Saturday, April 27. As announced last fall, the presentations will deal with psychosomatic relationships. Dr. Nolan D. C. Lewis, director of the Psychiatric Institute, will act as chairman and has planned a full and varied program. Interest in this relatively new field is expected to result in enthusiastic and well-attended sessions.

DR. JELLIFFE HONORED

The PSYCHIATRIC QUARTERLY is pleased to congratulate Dr. Smith Ely Jelliffe upon his election as honorary member of the Dutch Society of Neurology and Psychiatry.

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NEW STUDIES IN DEMENTIA PRÆCOX

The psychological department of St. Elizabeths Hospital announces the forthcoming publication of a new book, "Psychological Studies in Dementia Præcox," by Isabelle Kendig, Ph. D., and Winifred Richmond, Ph.D. The studies included treat of "Dementia præcox and general intelligence," "Patterns of mental function in dementia præcox," "Dementia præcox and the concept of deterioration." The research on which the papers are based was financed by private grants. While the volume will be sent without charge to those interested, it will be necessary to send 50 cents per copy to cover the mailing cost. Requests for copies should be directed to Dr. Isabelle Kendig, St. Elizabeths Hospital, Washington, D. C.

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MEDICAL SOCIETY OF ST. ELIZABETHS HOSPITAL

As previously announced, the third annual meeting of the Medical Society of St. Elizabeths Hospital will be held in Washington, D. C., on April 20, 1940. The business meeting, with election of officers, will take place in the morning. Following a luncheon, the scientific session will begin, with Solomon Katzenelbogen, M. D., as chairman. Papers will be read on "Alzheimer's disease," "Metrazol shock therapy in states of depression," "The personality of drug addicts" and "Personality and psychoses." Superintendent Winfred Overholser will give an address on "St. Elizabeths Hospital, past, present and future." The annual dinner will be held at 7:30 p. m. at the Mayflower Hotel. Guests will hear an address by the Honorable A. A. Berle, Jr., Assistant Secretary of State.

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PROPOSED NEW COMMITMENT STATUTE FOR ILLINOIS

The executive committee of recovery of the association of former patients of the Psychiatric Institute of the Illinois Research and Educational Hospitals announces the completion of the preliminary draft of a new commitment statute for the state of Illinois. The main features of the proposed statute are the abolition of court action and the elimination of the "court record." Under the new plan, a patient, after proper certification by two

physicians, will be admitted to a state hospital without petition, writ or trial. The hospital staff will be required to make an examination within 10 days of admission, and to send a report to a state board of supervisors composed of physicians, lawyers and laymen. The Recovery Association was founded November, 1937 by a group of patients discharged from the Psychiatric Institute as recovered, and has considerably increased in membership. It publishes a bimonthly journal, "Lost and Found," in which adjustment problems of the recovered patient are discussed. Inquiries should be addressed to Recovery, 1819 West Polk Street, Chicago.

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MEDICAL TECHNOLOGISTS FOR THE ARMY AND NAVY

The American National Red Cross announces the request of the Surgeon-General of the Army for the enrollment of various types of medical technologists who are willing to serve in the medical departments of the Army and Navy, if and when their services are required at the time of a national emergency. For enlistment or information, communications should be directed to the Red Cross headquarters in Washington.

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LECTURES IN GENERAL SEMANTICS

Announcement has been received from the Institute of General Semantics, 1234 East 56 Street, Chicago, of a series of seminar lecture courses being conducted by Count Alfred Korzybski. The schedule includes intensive seminars in June and August, and evening seminars for the winter, spring and summer seasons.